
EXHIBIT A
CONTINUED

U.S. Patent No. 6,324,150**Exhibit A4**

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
9. An optical pickup head ¹	<p>Each element of this claim, except where noted otherwise, and each element of the asserted claims dependent thereon, is present literally and/or under the doctrine of equivalents in the accused LG Products.²</p> <p>ITRI provides these infringement contentions before obtaining complete discovery and disclosures from LG. Specifically, LG has not produced documentation sufficient to demonstrate how each and every optical pickup head operates, and has not produced documentation sufficient to demonstrate that it has identified every LG document corresponding to accused optical pickup heads. Further, LG has “confirmed” that particular LG products utilize certain optical pickup heads that are not borne out by physical inspection. ITRI expects that LG will produce information to fully meet its discovery obligations regarding LG’s instrumentalities beyond that which is publically available. Accordingly, ITRI reserves the right to modify these infringement contentions based upon LG’s document production and required disclosures.</p>

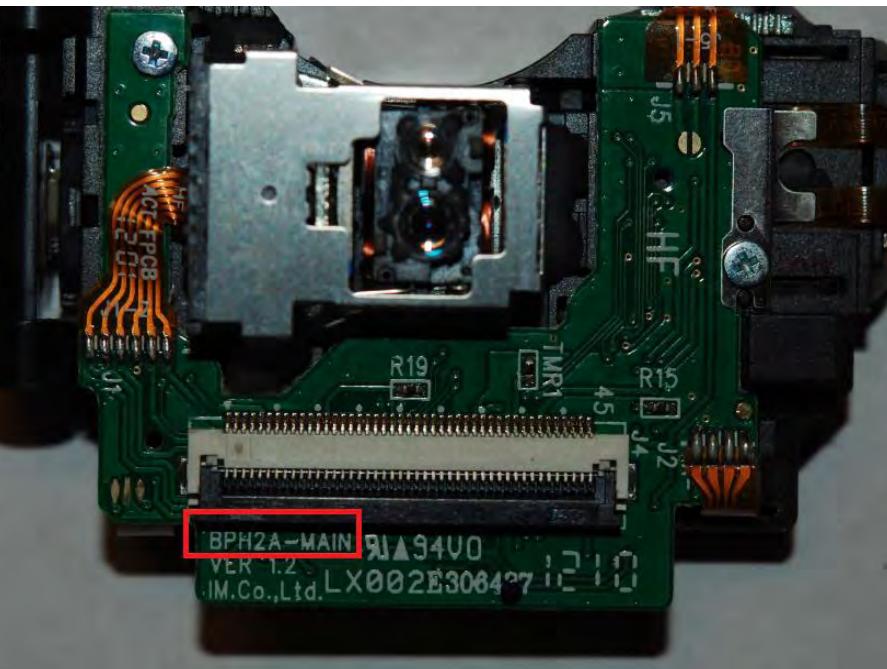
¹ ITRI contends that the preamble to this claim is not limiting in any manner. ITRI’s references to the accused product regarding the preamble are for illustration only and do not constitute an admission that the preamble is limiting.

² The LG Products often practice the claim elements in numerous alternative ways in accordance with the present chart. The LG Products should be assumed to act alone or in combination as referenced herein and interpreted in the singular or plural accordingly. LG further provides the LG Products as well as the instructions to customers/users causing them to use the accused products in an infringing manner, including, without limitation, in their default and expected uses.

To the extent each element of this claim, and the asserted claims dependent thereon are not present literally in the accused LG Products, each element is present under the doctrine of equivalents because there is no substantial difference between the elements of the asserted claims and the corresponding functionality in the accused instrumentality, *i.e.*, the corresponding functionality in the accused product performs substantially the same function, in substantially the same way to achieve substantially the same results as the claimed elements.

U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<p>ITRI contends that, upon physical inspection, the following products use optical pickup units (“OPUs”) that are identical for purposes of infringement analysis: LP220, BP320, BP520, and BP620. Moreover, physical inspection of the BP520 and BP620 shows that these units use the OPU BPH2A.</p> <p><i>Photograph of OPU from BP620</i></p>  <p>The photograph shows a close-up of a green printed circuit board (PCB) from an optical drive. A red box highlights a label on the PCB that reads "BPH2A-MAIN". Other visible labels include "R19", "TMR1", "R15", "J5", "J4", "J2", and "HF". The PCB is populated with various components, including a metal frame assembly and a central integrated circuit.</p>

U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<p>REDACTED</p> <p>REDACTED</p> <p>REDACTED</p> <p>REDACTED</p> <p>REDACTED</p>

U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<p>Thus, ITRI contends that all additional products that use the BPT-421 (model BPT-421A) or the BPH2A OPU infringe in a similar manner to the products physically inspected for this chart.</p> <p><i>Photograph of LG BP620 Wi-Fi Blu-ray Player</i></p> 

U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<p><i>Photograph of LG BP320 Wi-Fi Blu-ray Player</i></p> 

U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<p><i>Photograph of LG BP520 Wi-Fi Blu-ray Player</i></p> 

U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<p><i>Photograph of LG BP220 Wi-Fi Blu-ray Player</i></p> 

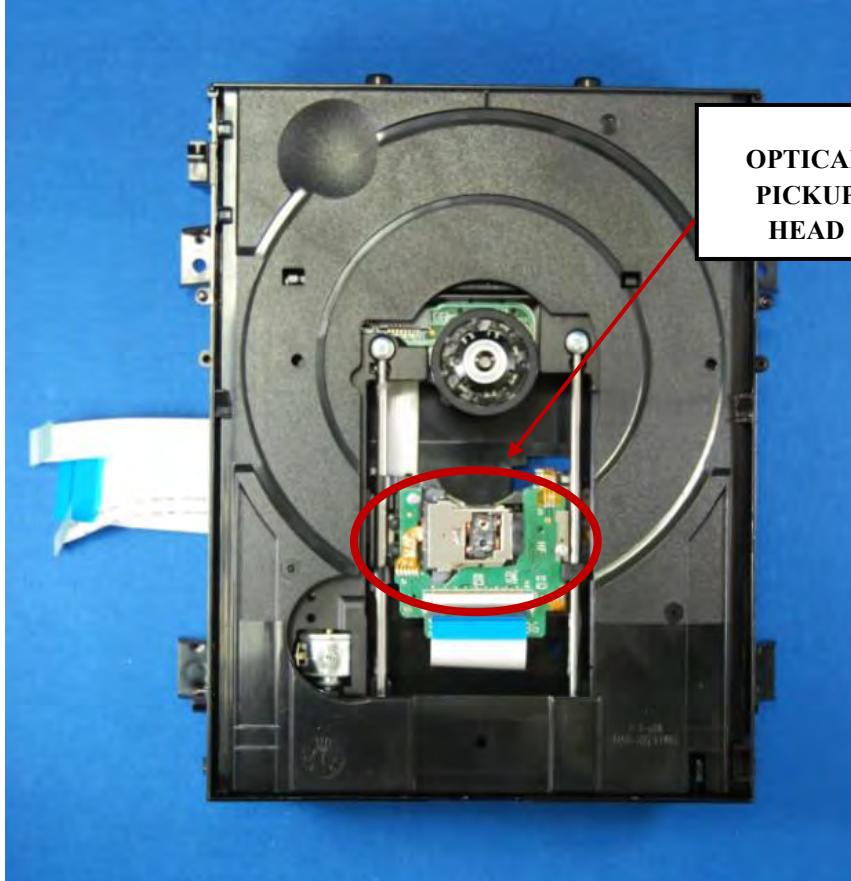
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<p><i>Photograph of optical disk drive module from BP220</i></p> 

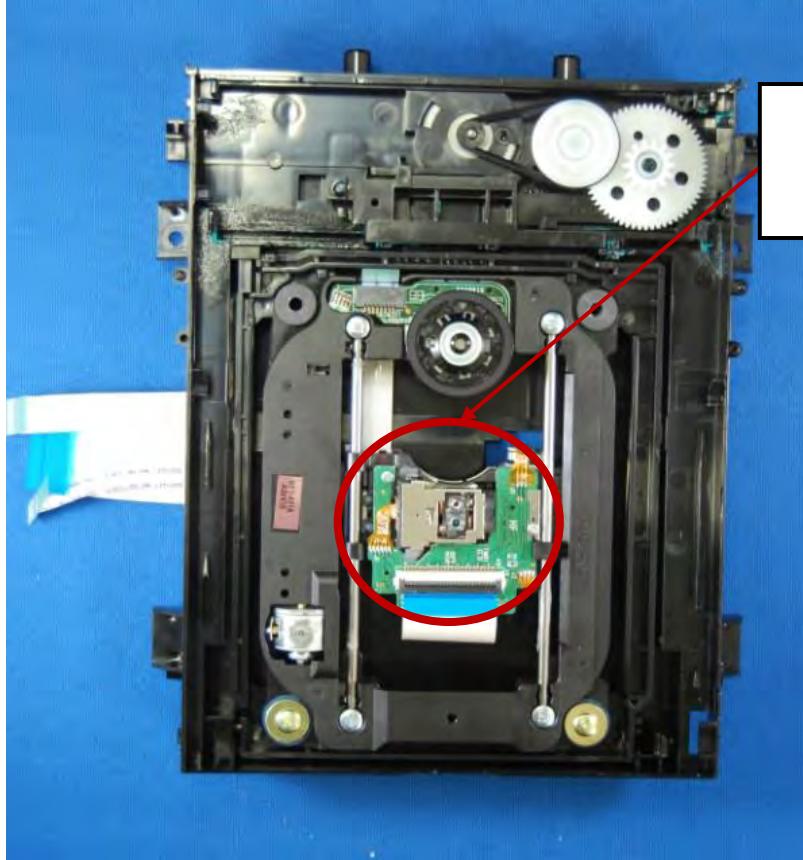
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<p><i>Photograph showing the optical disk drive mechanism with the panel cover removed from BP220</i></p>  <p>OPTICAL PICKUP HEAD</p>

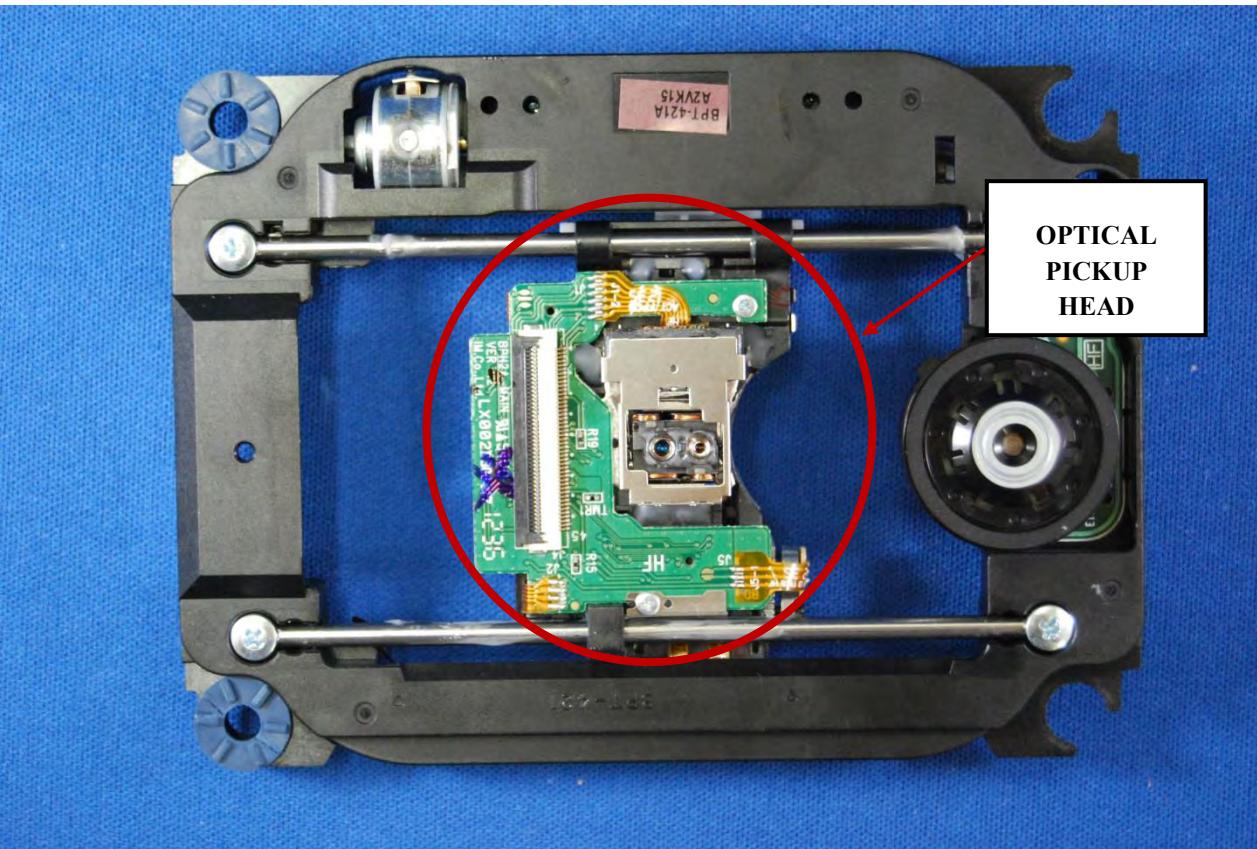
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<p><i>Photograph showing the optical disk drive mechanism without the top panel cover from BP220</i></p>  <p>OPTICAL PICKUP HEAD</p>

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Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<p><i>Photograph of the optical disk drive mechanism without the top and bottom panel covers from BP220</i></p>  <p>OPTICAL PICKUP HEAD</p>

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CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
9a. using multiple laser sources of different wavelengths for reading/writing data on optical recording media of varying densities, comprising:	<p><i>Photograph of the optical pick up head from BP220</i></p> <p>LASER SOURCES</p> <p>BLU-RAY LASER</p>

U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)																								
	<p>Home > Blu-ray Players > LG BP220</p> <p>FEATURES TECHNICAL SPECIFICATIONS REVIEWS ASK & ANSWER PRODUCT SUPPORT</p> <p>BLU-RAY DISC™ PLAYER WITH SMARTTV</p> <p>BP220 <input checked="" type="checkbox"/> COLLAPSE ALL Specs</p> <p><input checked="" type="checkbox"/> DISC PLAYBACK CAPABILITY</p> <table><tbody><tr><td>BD-Rom</td><td>Yes</td></tr><tr><td>BD-R</td><td>Yes</td></tr><tr><td>BD-RE</td><td>Yes</td></tr><tr><td>DVD (NTSC)</td><td>Yes</td></tr><tr><td>DVD (PAL)</td><td>Yes</td></tr><tr><td>DVD-R</td><td>Yes</td></tr><tr><td>DVD-RW</td><td>Yes</td></tr><tr><td>DVD+R</td><td>Yes</td></tr><tr><td>DVD+RW</td><td>Yes</td></tr><tr><td>Audio CD</td><td>Yes</td></tr><tr><td>DTS-CD</td><td>Yes</td></tr><tr><td>CD-R/CD-RW</td><td>Yes</td></tr></tbody></table> <p><input checked="" type="checkbox"/> VIDEO FORMAT</p> <p><input checked="" type="checkbox"/> VIDEO FEATURES</p> <p><input checked="" type="checkbox"/> AUDIO FORMAT</p> <p><input checked="" type="checkbox"/> AUDIO FEATURES</p> <p><input checked="" type="checkbox"/> SMART TV FEATURES</p> <p><input checked="" type="checkbox"/> CONNECTIVITY</p> <p><input checked="" type="checkbox"/> APPLICATION</p> <p><input checked="" type="checkbox"/> AV INPUTS/OUTPUTS</p> <p><input checked="" type="checkbox"/> SUPPLIED ACCESSORIES</p> <p><input checked="" type="checkbox"/> POWER</p> <p>Source: http://www.lg.com/us/blu-ray-players/lg-BP220-blu-ray-dvd-player</p>	BD-Rom	Yes	BD-R	Yes	BD-RE	Yes	DVD (NTSC)	Yes	DVD (PAL)	Yes	DVD-R	Yes	DVD-RW	Yes	DVD+R	Yes	DVD+RW	Yes	Audio CD	Yes	DTS-CD	Yes	CD-R/CD-RW	Yes
BD-Rom	Yes																								
BD-R	Yes																								
BD-RE	Yes																								
DVD (NTSC)	Yes																								
DVD (PAL)	Yes																								
DVD-R	Yes																								
DVD-RW	Yes																								
DVD+R	Yes																								
DVD+RW	Yes																								
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DTS-CD	Yes																								
CD-R/CD-RW	Yes																								

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CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)																																												
	<p>BLU-RAY DISC™ PLAYER WITH SMARTTV</p> <p>BP320</p> <p><input checked="" type="checkbox"/> COLLAPSE ALL Specs</p> <p><input checked="" type="checkbox"/> DISC PLAYBACK CAPABILITY</p> <table><tbody><tr><td>BD-Rom</td><td>Yes</td></tr><tr><td>BD-R</td><td>Yes</td></tr><tr><td>BD-RE</td><td>Yes</td></tr><tr><td>DVD (NTSC)</td><td>Yes</td></tr><tr><td>DVD (PAL)</td><td>Yes</td></tr><tr><td>DVD-R</td><td>Yes</td></tr><tr><td>DVD-RW</td><td>Yes</td></tr><tr><td>DVD+R</td><td>Yes</td></tr><tr><td>DVD+RW</td><td>Yes</td></tr><tr><td>Audio CD</td><td>Yes</td></tr><tr><td>DTS-CD</td><td>Yes</td></tr><tr><td>CD-R/CD-RW</td><td>Yes</td></tr></tbody></table> <p><input checked="" type="checkbox"/> VIDEO FORMAT</p> <table><tbody><tr><td>MPEG2</td><td>Yes</td></tr><tr><td>MPEG4 AVC (H.264)</td><td>Yes</td></tr><tr><td>MKV</td><td>Yes</td></tr><tr><td>AVC Rec</td><td>Yes</td></tr><tr><td>AVCHD</td><td>Yes</td></tr><tr><td>M4V</td><td>Yes</td></tr><tr><td>WMV</td><td>Yes</td></tr><tr><td>3GP</td><td>Yes</td></tr><tr><td>FLV</td><td>Yes</td></tr><tr><td>VOB</td><td>Yes</td></tr></tbody></table> <p>Source: http://www.lg.com/us/blu-ray-players/lg-BP320-blu-ray-dvd-player</p>	BD-Rom	Yes	BD-R	Yes	BD-RE	Yes	DVD (NTSC)	Yes	DVD (PAL)	Yes	DVD-R	Yes	DVD-RW	Yes	DVD+R	Yes	DVD+RW	Yes	Audio CD	Yes	DTS-CD	Yes	CD-R/CD-RW	Yes	MPEG2	Yes	MPEG4 AVC (H.264)	Yes	MKV	Yes	AVC Rec	Yes	AVCHD	Yes	M4V	Yes	WMV	Yes	3GP	Yes	FLV	Yes	VOB	Yes
BD-Rom	Yes																																												
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BD-RE	Yes																																												
DVD (NTSC)	Yes																																												
DVD (PAL)	Yes																																												
DVD-R	Yes																																												
DVD-RW	Yes																																												
DVD+R	Yes																																												
DVD+RW	Yes																																												
Audio CD	Yes																																												
DTS-CD	Yes																																												
CD-R/CD-RW	Yes																																												
MPEG2	Yes																																												
MPEG4 AVC (H.264)	Yes																																												
MKV	Yes																																												
AVC Rec	Yes																																												
AVCHD	Yes																																												
M4V	Yes																																												
WMV	Yes																																												
3GP	Yes																																												
FLV	Yes																																												
VOB	Yes																																												

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Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)																								
	<p>3D-CAPABLE BLU-RAY DISC™ PLAYER WITH SMARTTV AND WIRELESS CONNECTIVITY</p> <p>BP520</p> <p>DOWNLOAD PDF COLLAPSE ALL SPECS</p> <div style="border: 2px solid red; padding: 10px;"><p>DISC PLAYBACK CAPABILITY</p><table><tbody><tr><td>BD-Rom</td><td>Yes</td></tr><tr><td>BD-R</td><td>Yes</td></tr><tr><td>BD-RE</td><td>Yes</td></tr><tr><td>DVD (NTSC)</td><td>Yes</td></tr><tr><td>DVD (PAL)</td><td>Yes</td></tr><tr><td>DVD-R</td><td>Yes</td></tr><tr><td>DVD-RW</td><td>Yes</td></tr><tr><td>DVD+R</td><td>Yes</td></tr><tr><td>DVD+RW</td><td>Yes</td></tr><tr><td>Audio CD</td><td>Yes</td></tr><tr><td>DTS-CD</td><td>Yes</td></tr><tr><td>CD-R/CD-RW</td><td>Yes</td></tr></tbody></table><p>VIDEO FORMAT</p></div> <p>Source: http://www.lg.com/us/blu-ray-players/lg-BP520-blu-ray-dvd-player</p>	BD-Rom	Yes	BD-R	Yes	BD-RE	Yes	DVD (NTSC)	Yes	DVD (PAL)	Yes	DVD-R	Yes	DVD-RW	Yes	DVD+R	Yes	DVD+RW	Yes	Audio CD	Yes	DTS-CD	Yes	CD-R/CD-RW	Yes
BD-Rom	Yes																								
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DVD (NTSC)	Yes																								
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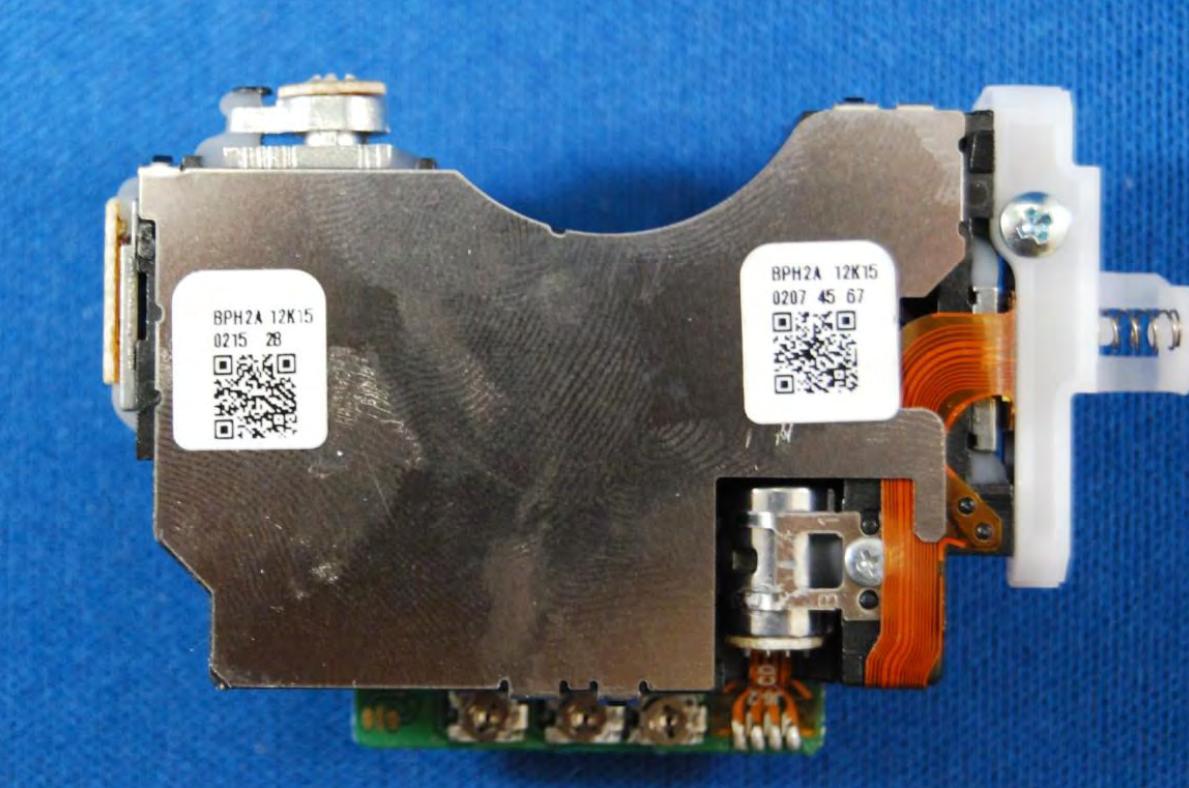
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)																								
	<p>3D-CAPABLE BLU-RAY DISC™ PLAYER WITH SMARTTV AND WIRELESS CONNECTIVITY</p> <p>BP620</p> <p>DOWNLOAD PDF COLLAPSE ALL SPECS</p> <div style="border: 2px solid red; padding: 10px;"><p>DISC PLAYBACK CAPABILITY</p><table><tbody><tr><td>BD-Rom</td><td>Yes</td></tr><tr><td>BD-R</td><td>Yes</td></tr><tr><td>BD-RE</td><td>Yes</td></tr><tr><td>DVD (NTSC)</td><td>Yes</td></tr><tr><td>DVD (PAL)</td><td>Yes</td></tr><tr><td>DVD-R</td><td>Yes</td></tr><tr><td>DVD-RW</td><td>Yes</td></tr><tr><td>DVD+R</td><td>Yes</td></tr><tr><td>DVD+RW</td><td>Yes</td></tr><tr><td>Audio CD</td><td>Yes</td></tr><tr><td>DTS-CD</td><td>Yes</td></tr><tr><td>CD-R/CD-RW</td><td>Yes</td></tr></tbody></table><p>VIDEO FORMAT</p><p>VIDEO FEATURES</p></div> <p>Source: http://www.lg.com/us/blu-ray-players/lg-BP620-blu-ray-dvd-player</p>	BD-Rom	Yes	BD-R	Yes	BD-RE	Yes	DVD (NTSC)	Yes	DVD (PAL)	Yes	DVD-R	Yes	DVD-RW	Yes	DVD+R	Yes	DVD+RW	Yes	Audio CD	Yes	DTS-CD	Yes	CD-R/CD-RW	Yes
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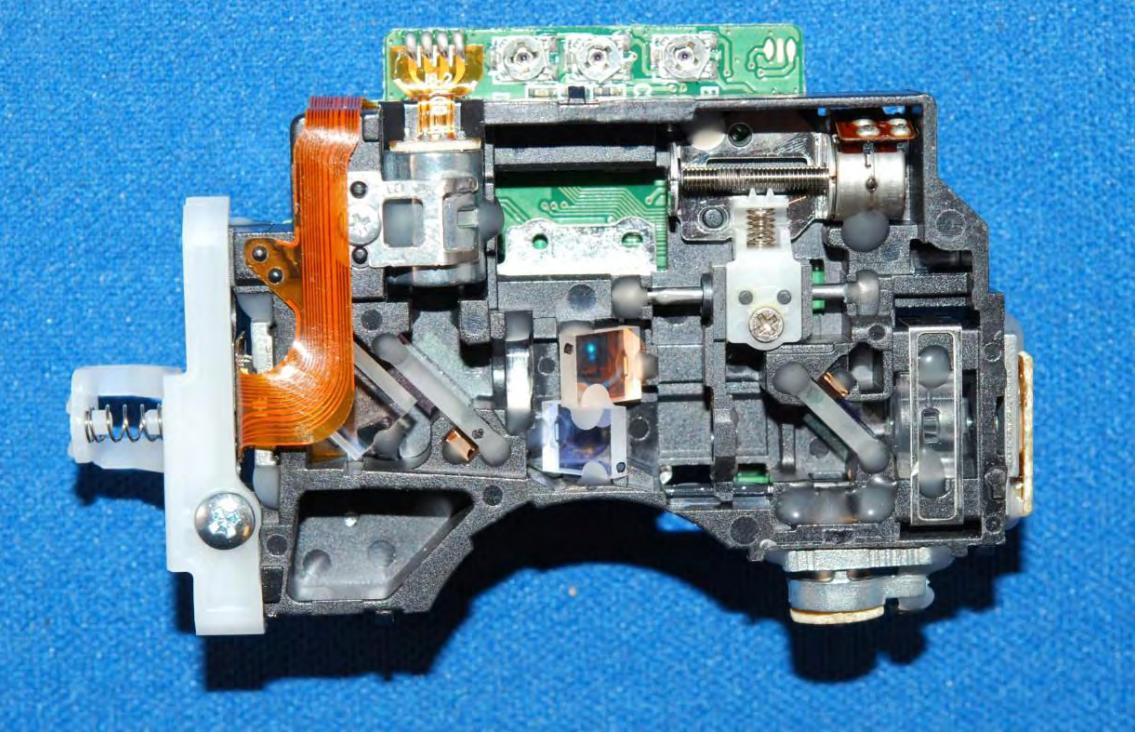
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<p><i>Photograph of the optical pick up head from bottom from BP220</i></p> 

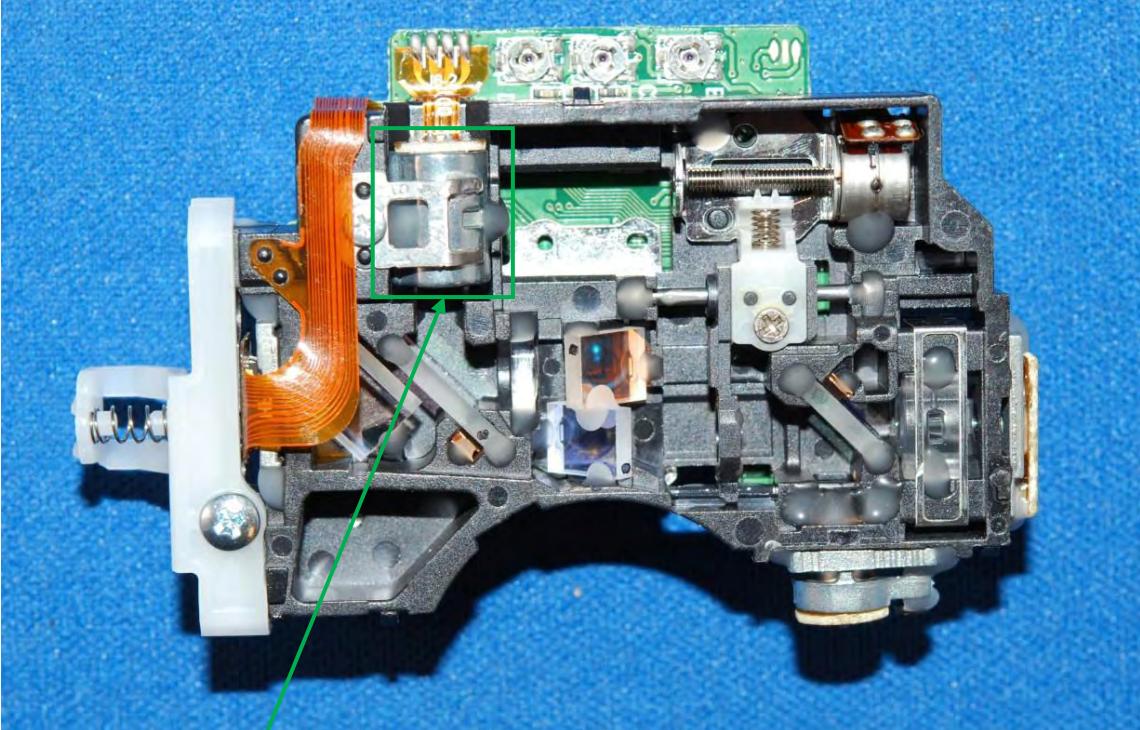
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
	<p><i>Photograph of the optical pick up head from BP220</i></p>  A photograph of an optical pick-up head assembly, likely from a DVD player. The assembly is shown from a top-down perspective, revealing its internal mechanical and optical components. It features a green printed circuit board (PCB) at the top, with various electronic components and connectors. Below the PCB, there is a complex arrangement of metal parts, including a lens, a mirror, and a beam splitter. A red ribbon cable is visible, connecting the PCB to other parts of the assembly. The entire assembly is mounted on a black plastic housing.

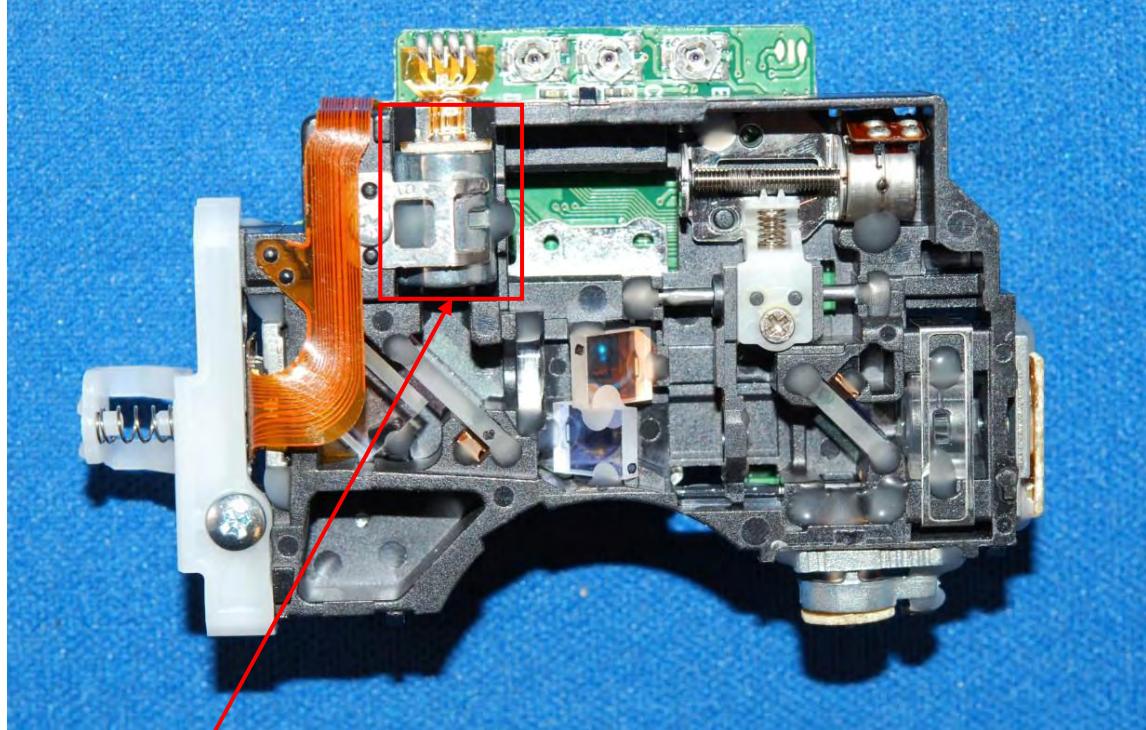
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
9b. a first laser beam generator and	 <p data-bbox="699 1220 1051 1334">FIRST AND SECOND LASER BEAM GENERATORS</p>

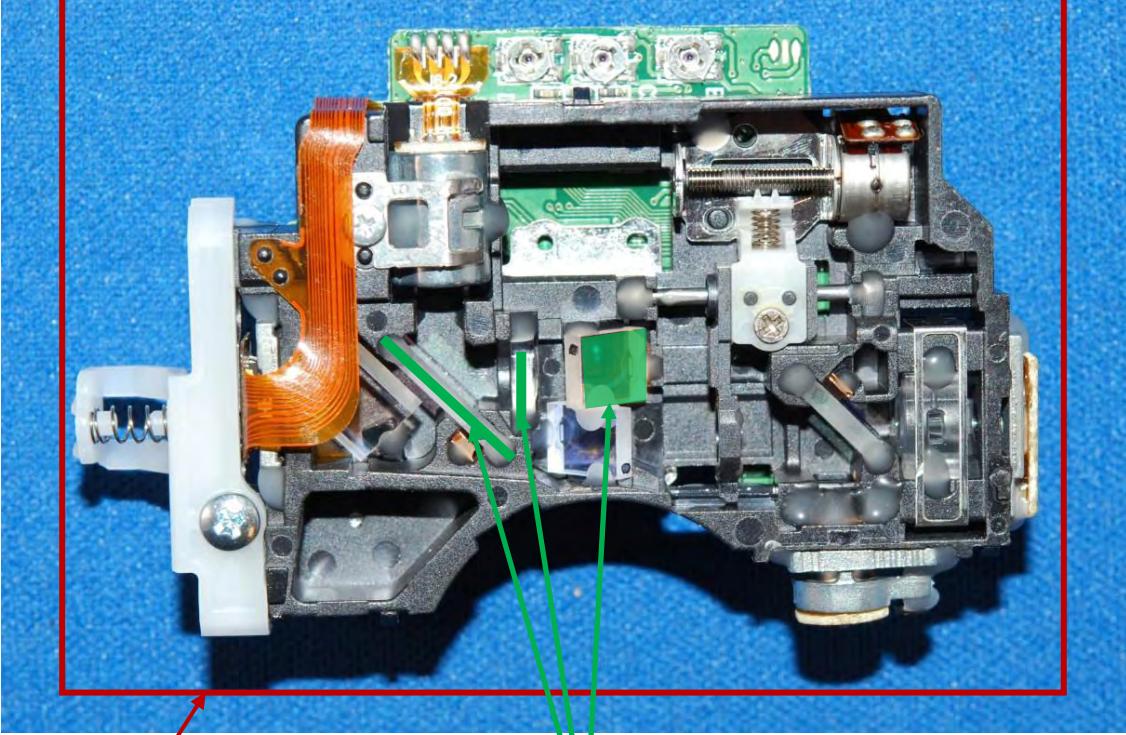
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
9c. a second laser beam generator, for generating a first laser beam and a second laser beam of different wavelengths,	 <p data-bbox="713 1171 973 1269" style="border: 2px solid red; padding: 5px; text-align: center;">FIRST AND SECOND LASER BEAM GENERATORS</p> <p data-bbox="530 1339 1769 1372">CD and DVD use 780 nm and 650nm red lasers, respectively, Blu-ray uses a 405 nm blue laser</p>

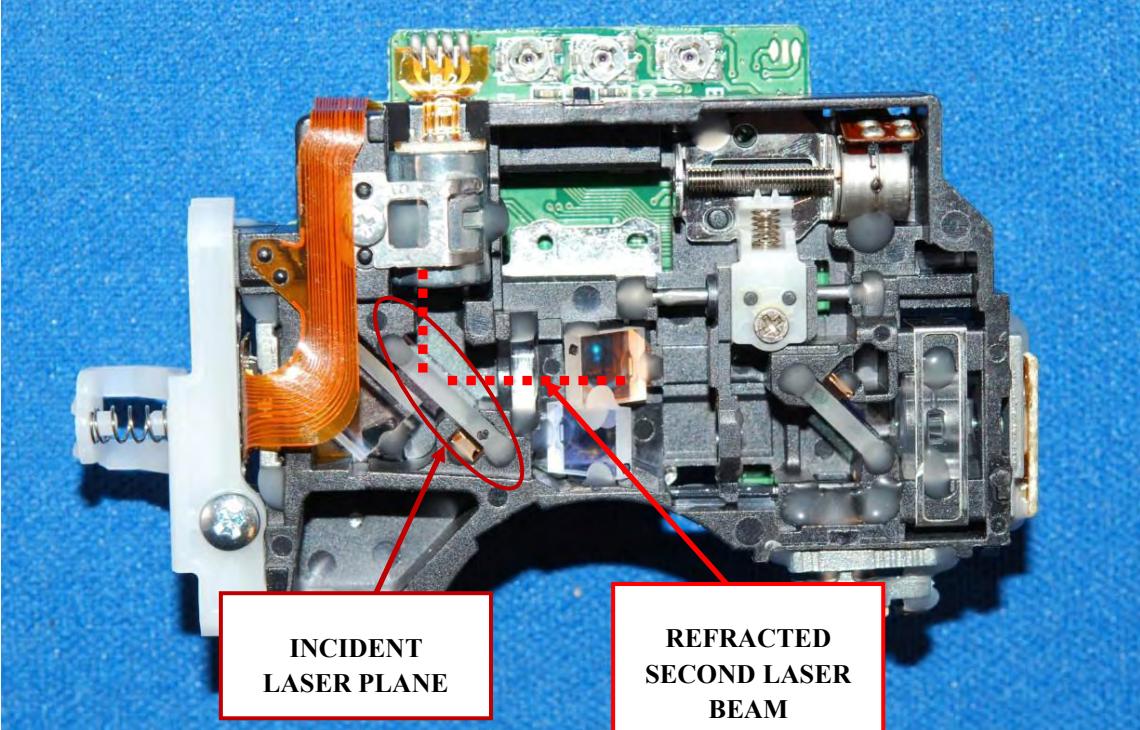
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
9d. a beam shaper, allocated in optical paths of said first and second laser beams, and formed with a plurality of planes locating in different angles, comprising:	 <p data-bbox="629 1209 903 1302">BEAM SHAPER</p> <p data-bbox="1051 1209 1368 1334">PLURALITY OF PLANES</p>

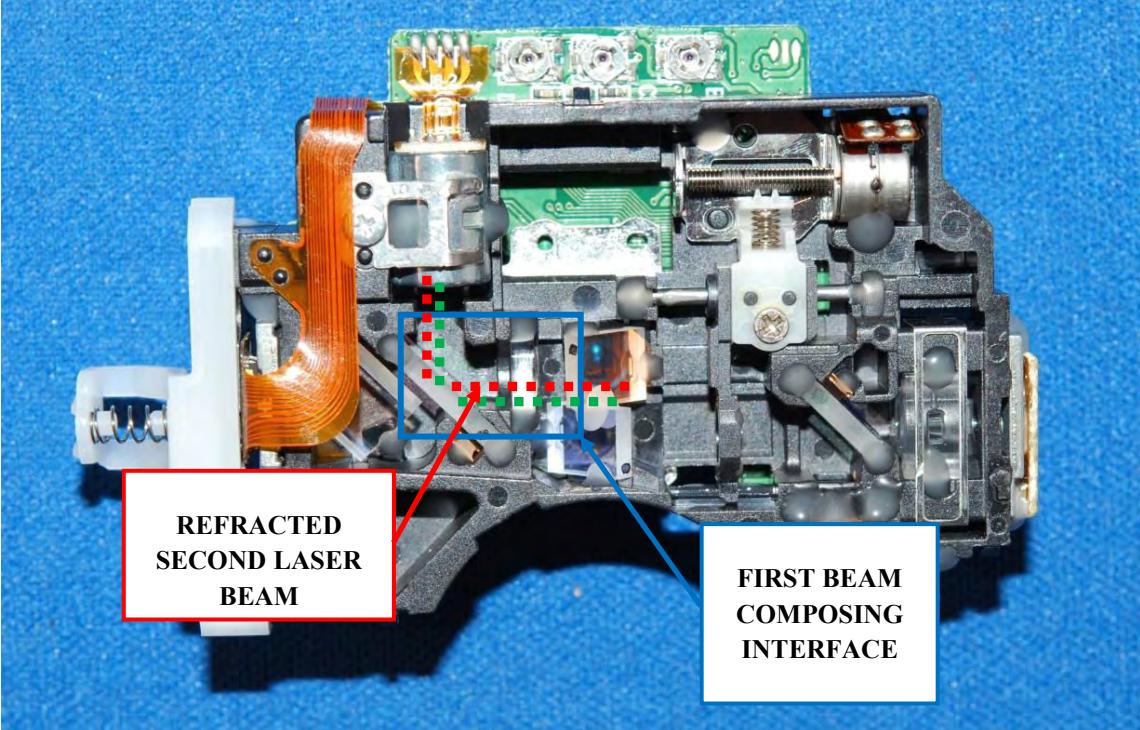
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
9e. an incident laser plane for refracting said second laser beam, to generate a refracted second laser beam;	 <p data-bbox="629 1106 1389 1269">Legend: SECOND LASER BEAM INCIDENT LASER PLANE REFRACTED SECOND LASER BEAM</p>

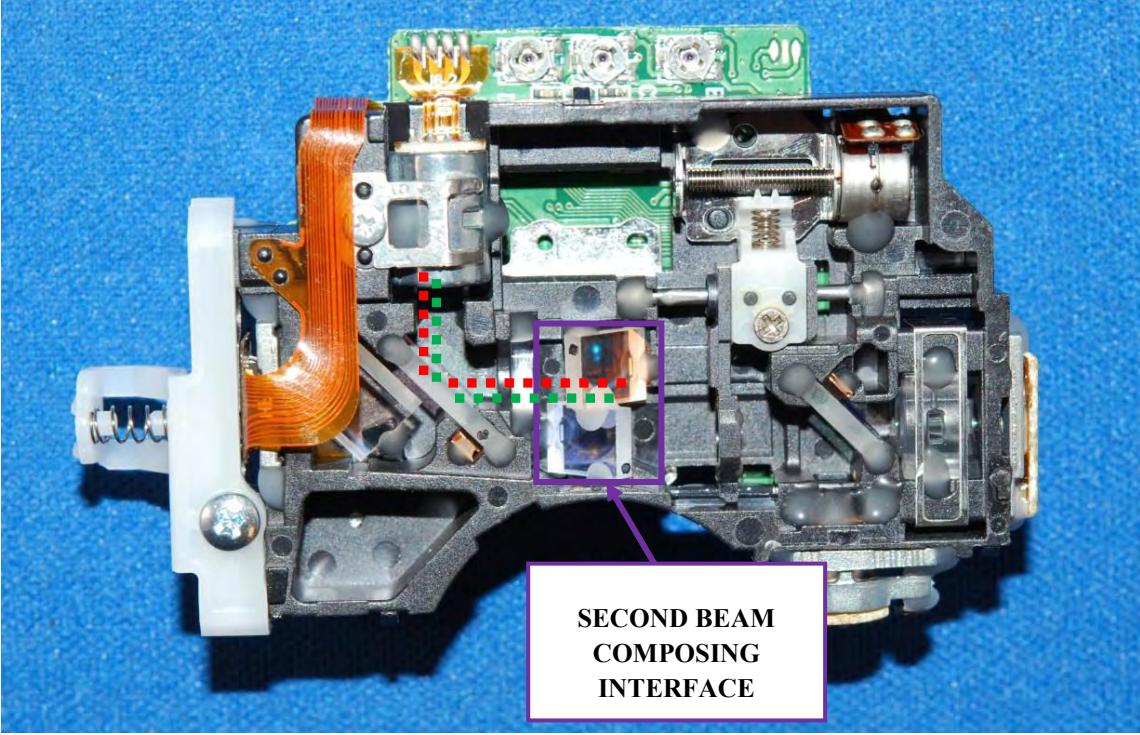
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
9f. a first beam-composing interface for composing said refracted second laser beam with said first laser beam into an optical output path;	 <p data-bbox="762 882 994 980">REFRACTED SECOND LASER BEAM</p> <p data-bbox="1353 931 1522 1029">FIRST BEAM COMPOSING INTERFACE</p> <p data-bbox="642 1139 1326 1241">Legend: SECOND LASER BEAM FIRST LASER BEAM</p>

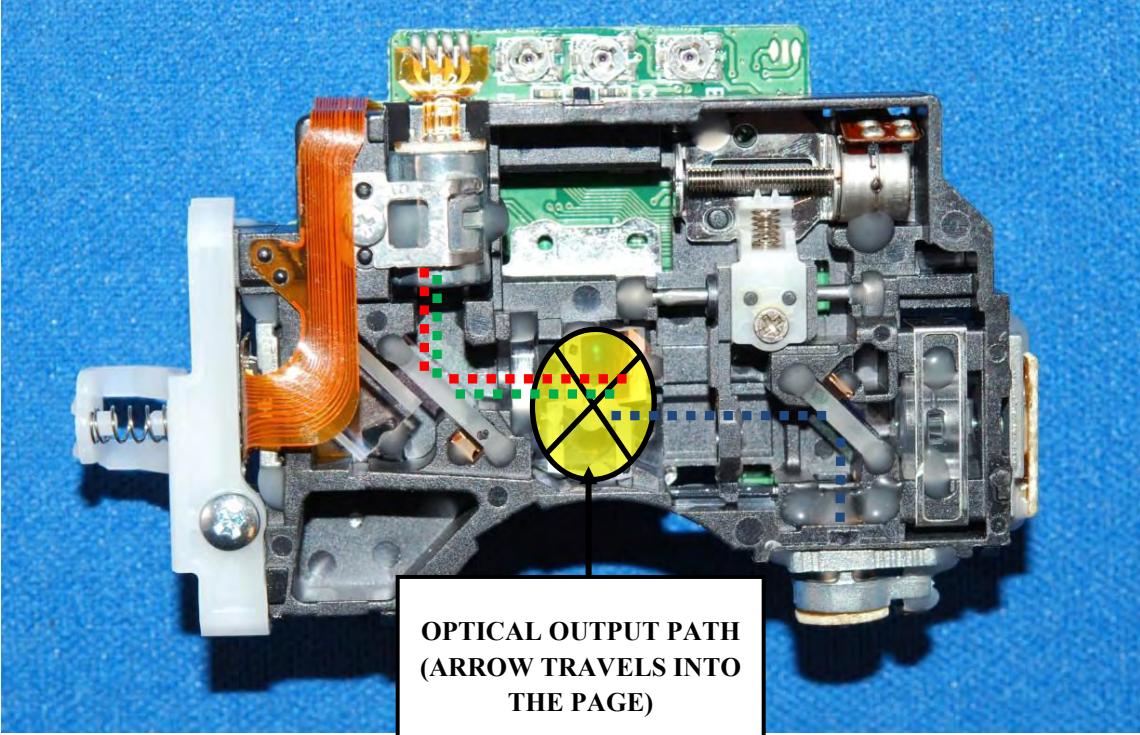
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
9g. a second beam-composing interface for composing said first and second laser beams,	 <p data-bbox="1157 964 1410 1073">SECOND BEAM COMPOSING INTERFACE</p> <p data-bbox="650 1139 1326 1232">Legend: SECOND LASER BEAM FIRST LASER BEAM</p>

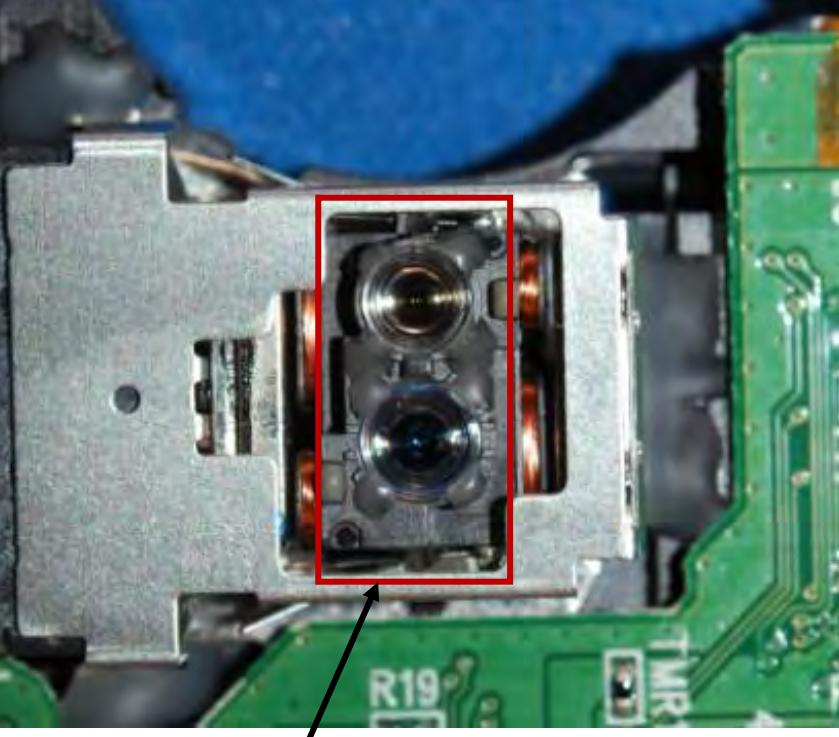
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
9h. after they are being composed by said first beam-composing interface, with a third laser beam into said optical output path;	 <p data-bbox="1015 948 1374 1111">OPTICAL OUTPUT PATH (ARROW TRAVELS INTO THE PAGE)</p> <p data-bbox="650 1160 1453 1307">Legend: SECOND LASER BEAM ······ FIRST LASER BEAM ······ THIRD LASER BEAM (BLU-RAY) ······</p>

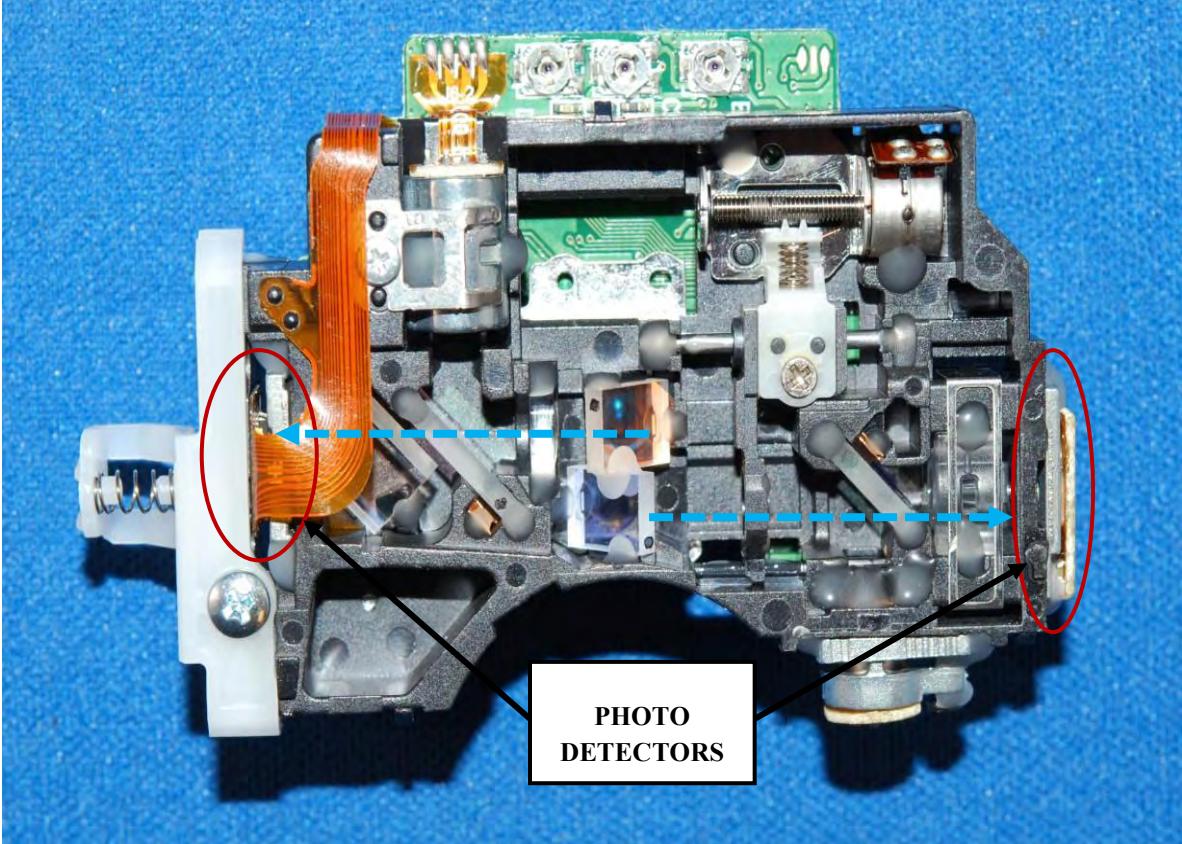
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
9i. an objective lens for focusing laser beams in said optical output path onto said optical recording media as an reading/writing spot; and	<p><i>Photograph of the optical pick up head from BP220</i></p>  <p>AT LEAST ONE OBJECTIVE LENS</p>

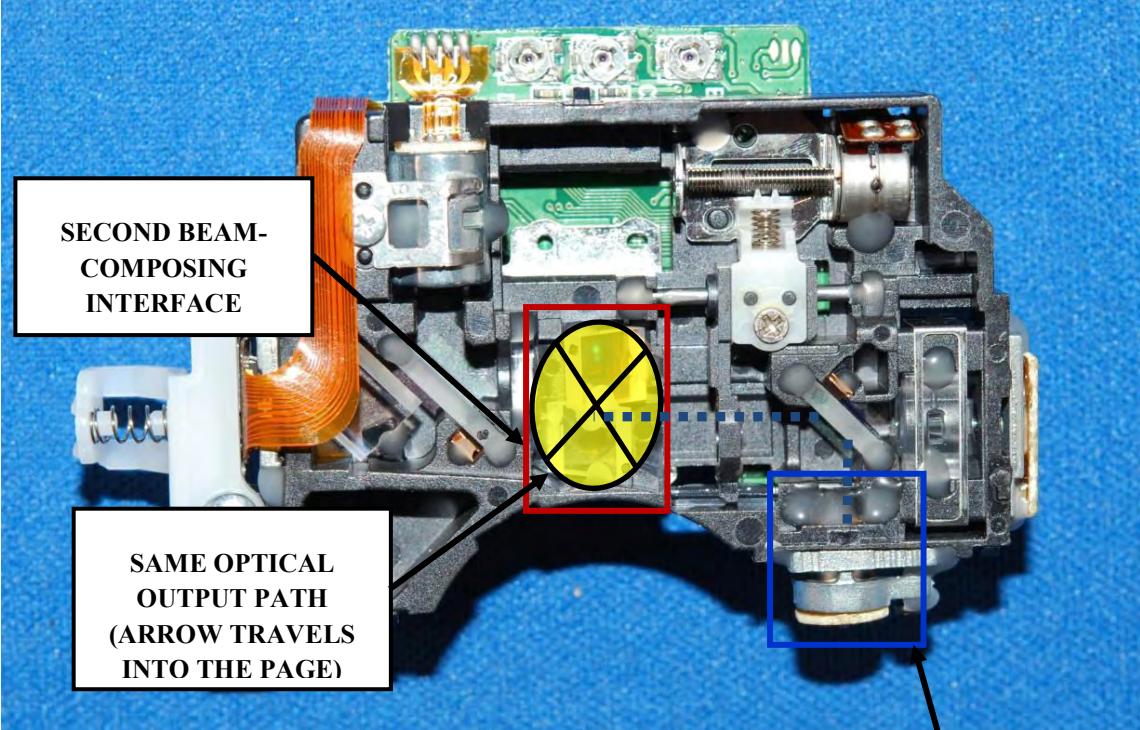
U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
9j. a photo detector for transforming a reflective laser beam returning from said optical recording media into corresponding signals and accomplishing data retrieval;	 <p data-bbox="1136 1041 1347 1155">PHOTO DETECTORS</p> <p data-bbox="656 1253 1374 1367">Legend: REFLECTIVE LASER BEAM -----</p>

U.S. Patent No. 6,324,150

Exhibit A4

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP220, BP320, BP520, BP620)
9k. wherein said third laser beam is an incident laser beam generated by a third laser beam generator, refracted to said second beam-composing interface and composed into same optical output path.	 <p data-bbox="677 572 925 698">SECOND BEAM-COMPOSING INTERFACE</p> <p data-bbox="734 923 982 1049">SAME OPTICAL OUTPUT PATH (ARROW TRAVELS INTO THE PAGE)</p> <p data-bbox="650 1139 1320 1171">Legend: THIRD LASER BEAM</p> <p data-bbox="1495 1171 1776 1264">THIRD LASER BEAM GENERATOR (BLU-RAY)</p>

U.S. Patent No. 6,324,150**Exhibit A5**

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
9. An optical pickup head ¹	<p>Each element of this claim, except where noted otherwise, and each element of the asserted claims dependent thereon, is present literally and/or under the doctrine of equivalents in the accused LG Products.²</p> <p>ITRI provides these infringement contentions before obtaining complete discovery and disclosures from LG. Specifically, LG has not produced documentation sufficient to demonstrate how each and every optical pickup head operates, and has not produced documentation sufficient to demonstrate that it has identified every LG document corresponding to accused optical pickup heads. Further, LG has “confirmed” that particular LG products utilize certain optical pickup heads that are not borne out by physical inspection. ITRI expects that LG will produce information to fully meet its discovery obligations regarding LG’s instrumentalities beyond that which is publically available. Accordingly, ITRI reserves the right to modify these infringement contentions based upon LG’s document production and required disclosures.</p>

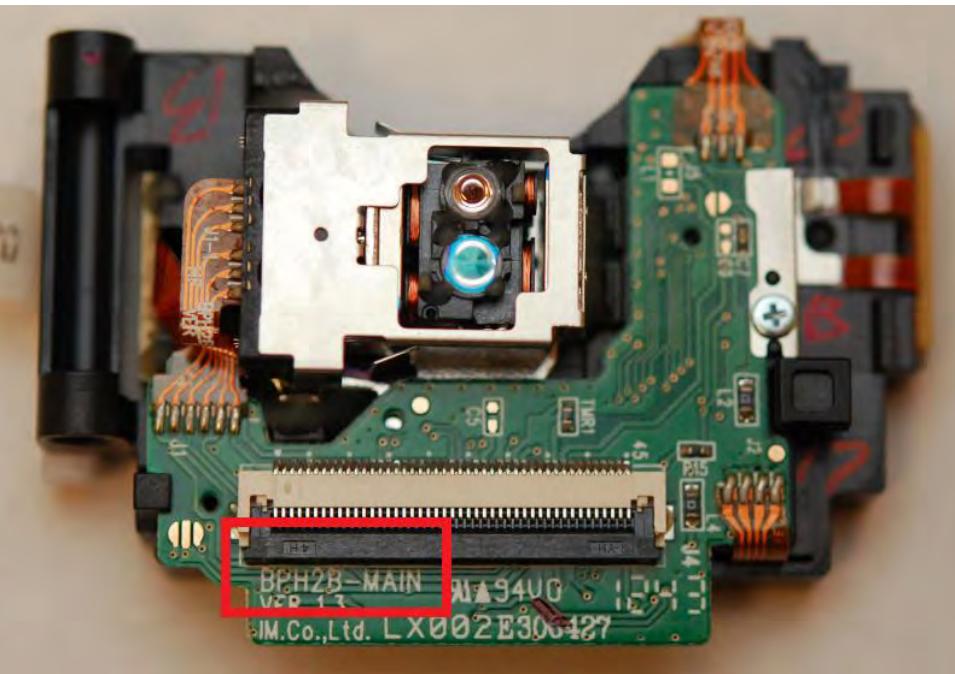
¹ ITRI contends that the preamble to this claim is not limiting in any manner. ITRI’s references to the accused product regarding the preamble are for illustration only and do not constitute an admission that the preamble is limiting.

² The LG Products often practice the claim elements in numerous alternative ways in accordance with the present chart. The LG Products should be assumed to act alone or in combination as referenced herein and interpreted in the singular or plural accordingly. LG further provides the LG Products as well as the instructions to customers/users causing them to use the accused products in an infringing manner, including, without limitation, in their default and expected uses.

To the extent each element of this claim, and the asserted claims dependent thereon are not present literally in the accused LG Products, each element is present under the doctrine of equivalents because there is no substantial difference between the elements of the asserted claims and the corresponding functionality in the accused instrumentality, *i.e.*, the corresponding functionality in the accused product performs substantially the same function, in substantially the same way to achieve substantially the same results as the claimed elements.

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CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
	<p>ITRI contends that, upon physical inspection, the BP530 uses optical pickup unit (“OPU”) BPH2B.</p>  <p><i>Photograph of OPU from BP530</i></p> <p>The BPH2B (also referred to as the SOH-BPH2B) is used in the BPT-423 Series T-Deck, model BPT-423A. [REDACTED] This OPU is shown in the following images from the specification for the BPT-423 (model BPT-423A).</p>

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CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
	REDACTED

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Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
	REDACTED

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Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
	<p><i>Photograph of LG BP530 Smart 3D Blu-ray Player</i></p>

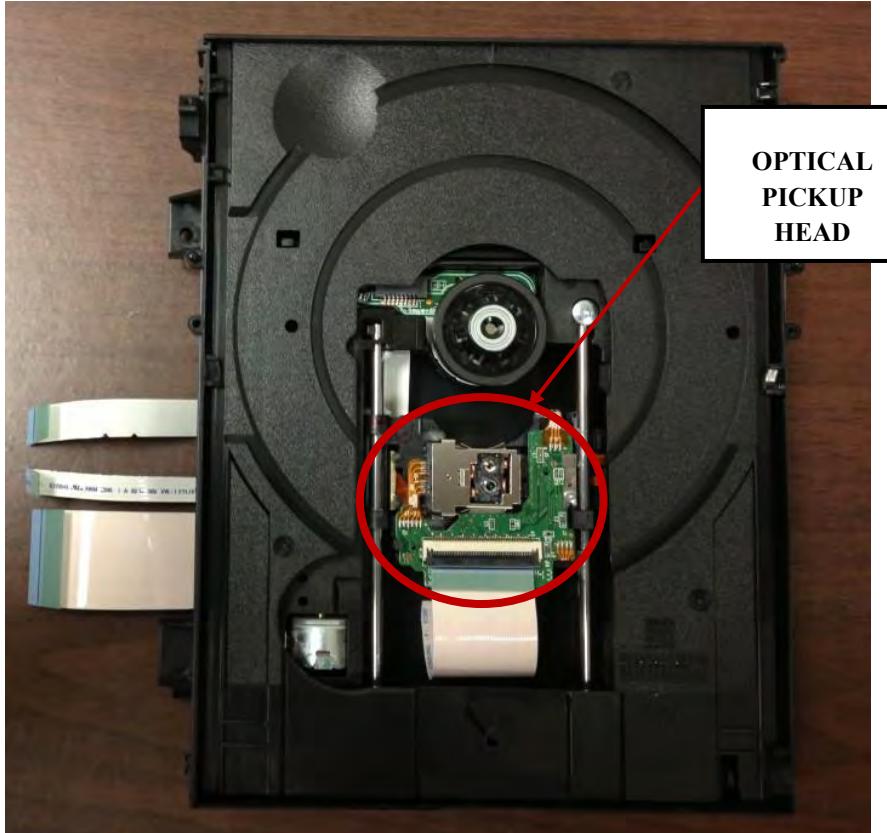
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
	<p><i>Photograph of optical disk drive module</i></p> 

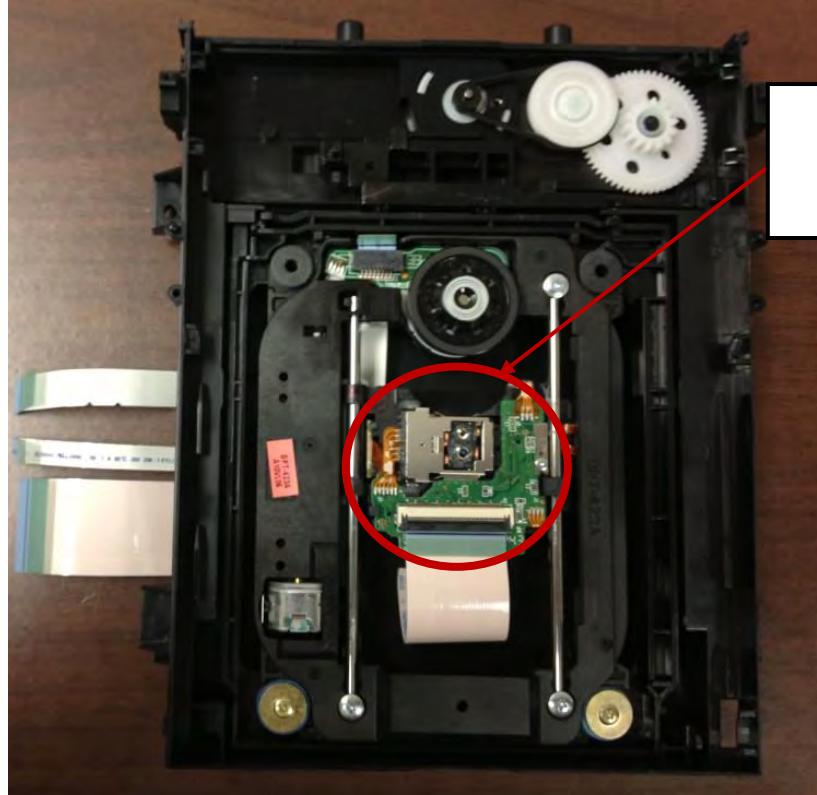
U.S. Patent No. 6,324,150

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CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
	<p><i>Photograph showing the optical disk drive mechanism with the panel cover removed</i></p>  <p>OPTICAL PICKUP HEAD</p>

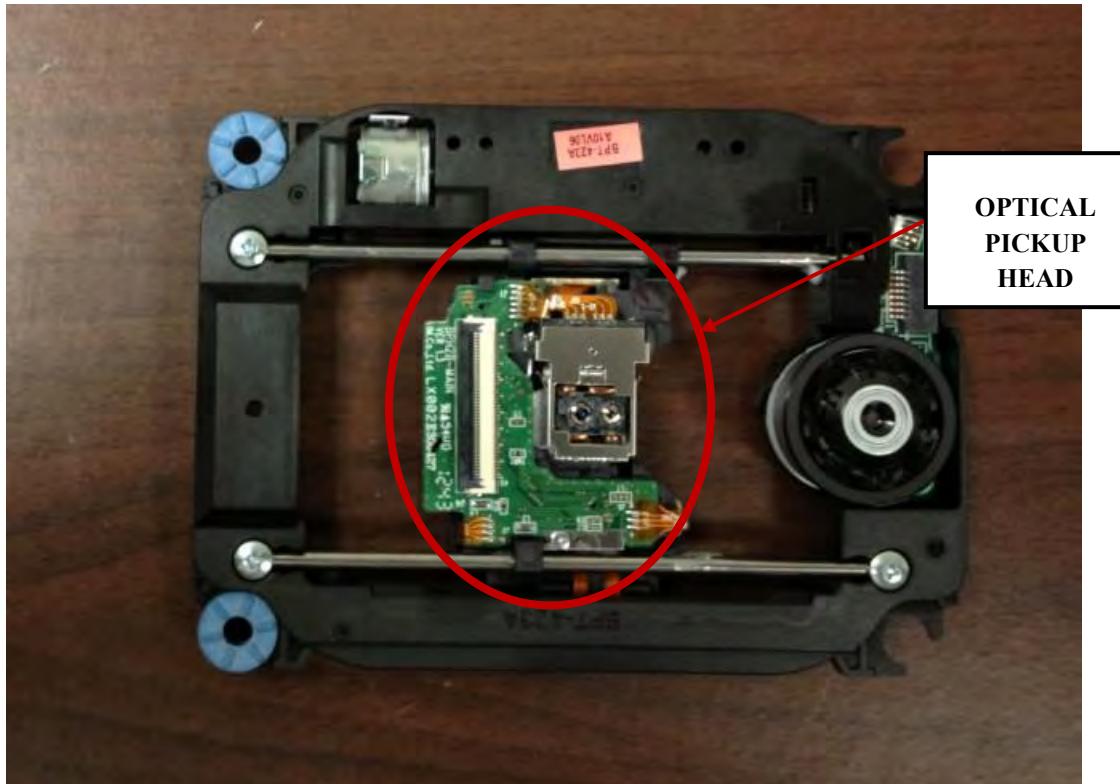
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
	<p><i>Photograph showing the optical disk drive mechanism without the top panel cover</i></p>  <p data-bbox="1622 540 1790 698">OPTICAL PICKUP HEAD</p>

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CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
	<p><i>Photograph of the optical disk drive mechanism without the top and bottom panel covers</i></p>  <p>OPTICAL PICKUP HEAD</p>

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CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
9a. using multiple laser sources of different wavelengths for reading/writing data on optical recording media of varying densities, comprising:	

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CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)														
	<p>BP530 DOWNLOAD PDF <input style="background-color: red; color: white; border: none; padding: 2px 5px;" type="button" value="COLLAPSE ALL SPECS"/></p> <p><input type="checkbox"/> PROFILE & PLAYABLE DISC</p> <table><tbody><tr><td>BD Profile</td><td>5.0</td></tr><tr><td>USB Playback</td><td>Yes</td></tr><tr><td>External HDD Playback</td><td>Yes (via USB)</td></tr><tr><td>BD-ROM/BD-R/BD-RE</td><td>Yes</td></tr><tr><td>DVD-ROM/DVD±R/DVD±RW</td><td>Yes</td></tr><tr><td>Audio CD/CD-R/CD-RW</td><td>Yes</td></tr><tr><td>DTS-CD</td><td>Yes</td></tr></tbody></table> <p>Source: http://www.lg.com/us/blu-ray-players/lg-BP530-blu-ray-dvd-player</p>	BD Profile	5.0	USB Playback	Yes	External HDD Playback	Yes (via USB)	BD-ROM/BD-R/BD-RE	Yes	DVD-ROM/DVD±R/DVD±RW	Yes	Audio CD/CD-R/CD-RW	Yes	DTS-CD	Yes
BD Profile	5.0														
USB Playback	Yes														
External HDD Playback	Yes (via USB)														
BD-ROM/BD-R/BD-RE	Yes														
DVD-ROM/DVD±R/DVD±RW	Yes														
Audio CD/CD-R/CD-RW	Yes														
DTS-CD	Yes														

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CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)														
	<p>3D-CAPABLE BLU-RAY DISC™ PLAYER WITH SMART TV AND MAGIC REMOTE</p> <p>BP730</p> <p>PROFILE & PLAYABLE DISC</p> <table><tbody><tr><td>BD Profile</td><td>5.0</td></tr><tr><td>USB Playback</td><td>Yes</td></tr><tr><td>External HDD Playback</td><td>Yes (via USB)</td></tr><tr><td>BD-ROM/BD-R/BD-RE</td><td>Yes</td></tr><tr><td>DVD-ROM/DVD±R/DVD±RW</td><td>Yes</td></tr><tr><td>Audio CD/CD-R/CD-RW</td><td>Yes</td></tr><tr><td>DTS-CD</td><td>Yes</td></tr></tbody></table> <p>Source: http://www.lg.com/us/blu-ray-players/lg-BP730-blu-ray-player</p>	BD Profile	5.0	USB Playback	Yes	External HDD Playback	Yes (via USB)	BD-ROM/BD-R/BD-RE	Yes	DVD-ROM/DVD±R/DVD±RW	Yes	Audio CD/CD-R/CD-RW	Yes	DTS-CD	Yes
BD Profile	5.0														
USB Playback	Yes														
External HDD Playback	Yes (via USB)														
BD-ROM/BD-R/BD-RE	Yes														
DVD-ROM/DVD±R/DVD±RW	Yes														
Audio CD/CD-R/CD-RW	Yes														
DTS-CD	Yes														

U.S. Patent No. 6,324,150

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CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
	REDACTED

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Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)						
	<p>3D-CAPABLE BLU-RAY DISC™ HOME THEATER SYSTEM WITH SMART TV</p> <p>BH6730S</p> <p>COLLAPSE ALL Specs</p> <p>GENERAL</p> <p>FEATURES</p> <p>SUPPORTED MEDIA</p> <table border="1"><tr><td>Blu-ray</td><td>Yes</td></tr><tr><td>CD / CD-R / CD-RW</td><td>Yes</td></tr><tr><td>DVD / DVD±R / DVD±RW</td><td>Yes</td></tr></table> <p>Source: http://www.lg.com/us/home-theater-systems/lg-BH6730S-home-theater-system</p>	Blu-ray	Yes	CD / CD-R / CD-RW	Yes	DVD / DVD±R / DVD±RW	Yes
Blu-ray	Yes						
CD / CD-R / CD-RW	Yes						
DVD / DVD±R / DVD±RW	Yes						

U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)						
	<p>3D-CAPABLE 9.1 CH ARAMID FIBER BLU-RAY DISC™ HOME THEATER SYSTEM WITH SMART TV</p> <p>BH9430PW</p> <p>COLLAPSE ALL Specs</p> <p>GENERAL</p> <p>FEATURES</p> <p>SUPPORTED MEDIA</p> <table border="1"><tr><td>Blu-ray</td><td>Yes</td></tr><tr><td>CD / CD-R / CD-RW</td><td>Yes</td></tr><tr><td>DVD / DVD±R / DVD±RW</td><td>Yes</td></tr></table> <p>Source: http://www.lg.com/us/home-theater-systems/lg-BH9430PW-home-theater-system</p>	Blu-ray	Yes	CD / CD-R / CD-RW	Yes	DVD / DVD±R / DVD±RW	Yes
Blu-ray	Yes						
CD / CD-R / CD-RW	Yes						
DVD / DVD±R / DVD±RW	Yes						

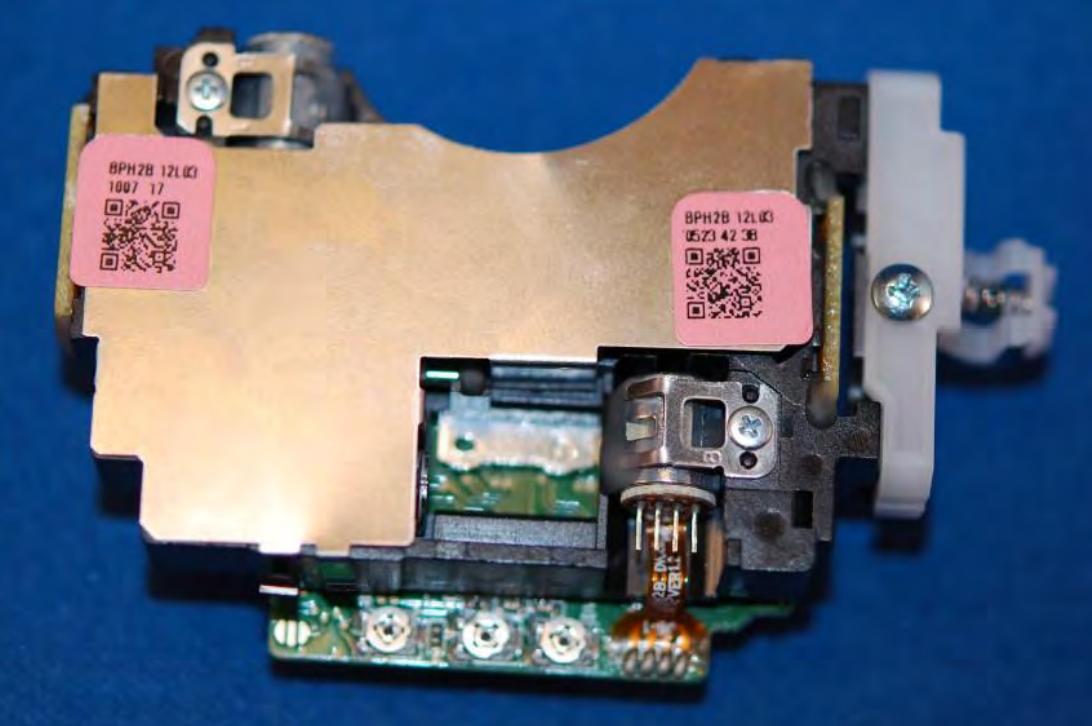
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)						
	<p>3D-CAPABLE 9.1 CH ARAMID FIBER BLU-RAY DISC™ HOME THEATER SYSTEM WITH SMART TV</p> <p>BH9431PW</p> <p>- COLLAPSE ALL Specs</p> <p>+ GENERAL</p> <p>+ FEATURES</p> <p>- SUPPORTED MEDIA</p> <table border="1"><tr><td>Blu-ray</td><td>Yes</td></tr><tr><td>CD / CD-R / CD-RW</td><td>Yes</td></tr><tr><td>DVD / DVD±R / DVD±RW</td><td>Yes</td></tr></table> <p>Source: http://www.lg.com/us/home-theater-systems/lg-BH9431PW-home-theater-system</p>	Blu-ray	Yes	CD / CD-R / CD-RW	Yes	DVD / DVD±R / DVD±RW	Yes
Blu-ray	Yes						
CD / CD-R / CD-RW	Yes						
DVD / DVD±R / DVD±RW	Yes						

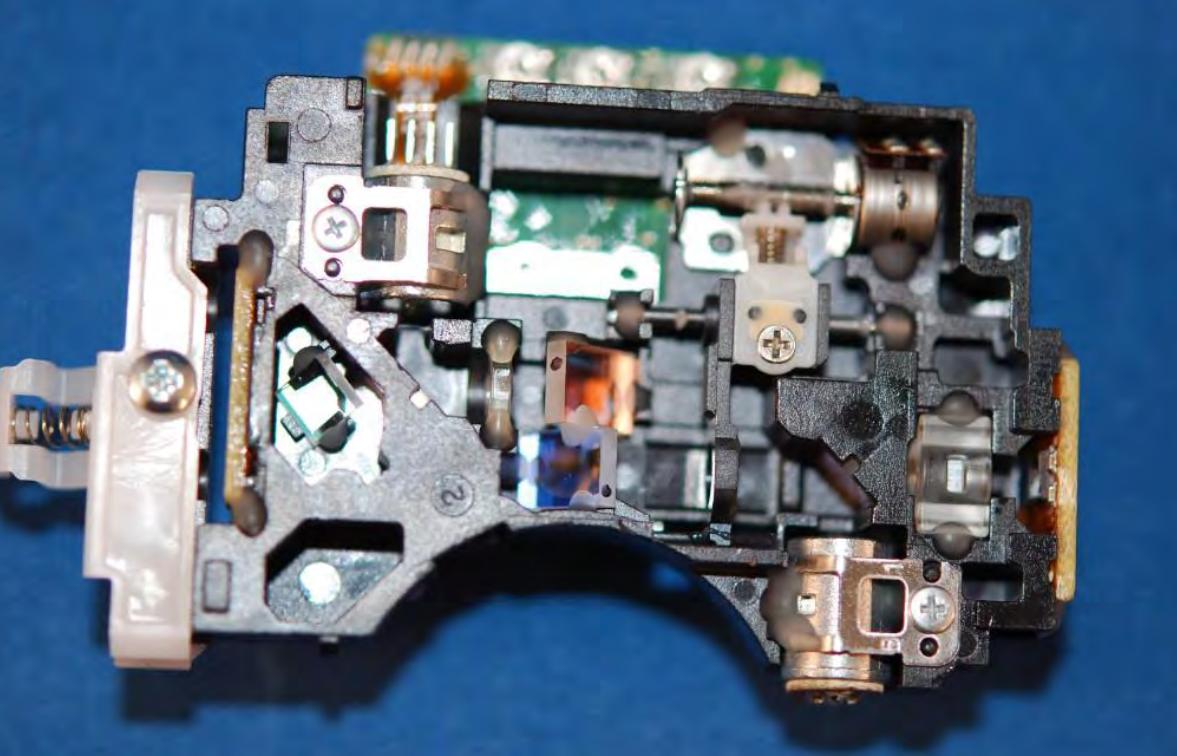
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
	<p><i>Photograph of the optical pick up head from bottom</i></p>  A photograph showing the underside of an optical pick-up head. The device is mounted on a green printed circuit board (PCB). Two pink rectangular labels are attached to the metal housing. The label on the left reads "BPH2B 12L03" and "1007 17" with a QR code. The label on the right reads "BPH2B 12L03" and "1523 42 38" with a QR code. The central component is a black lens assembly with a small orange component attached to it. The metal housing has several mounting points and a gear-like structure on the right side.

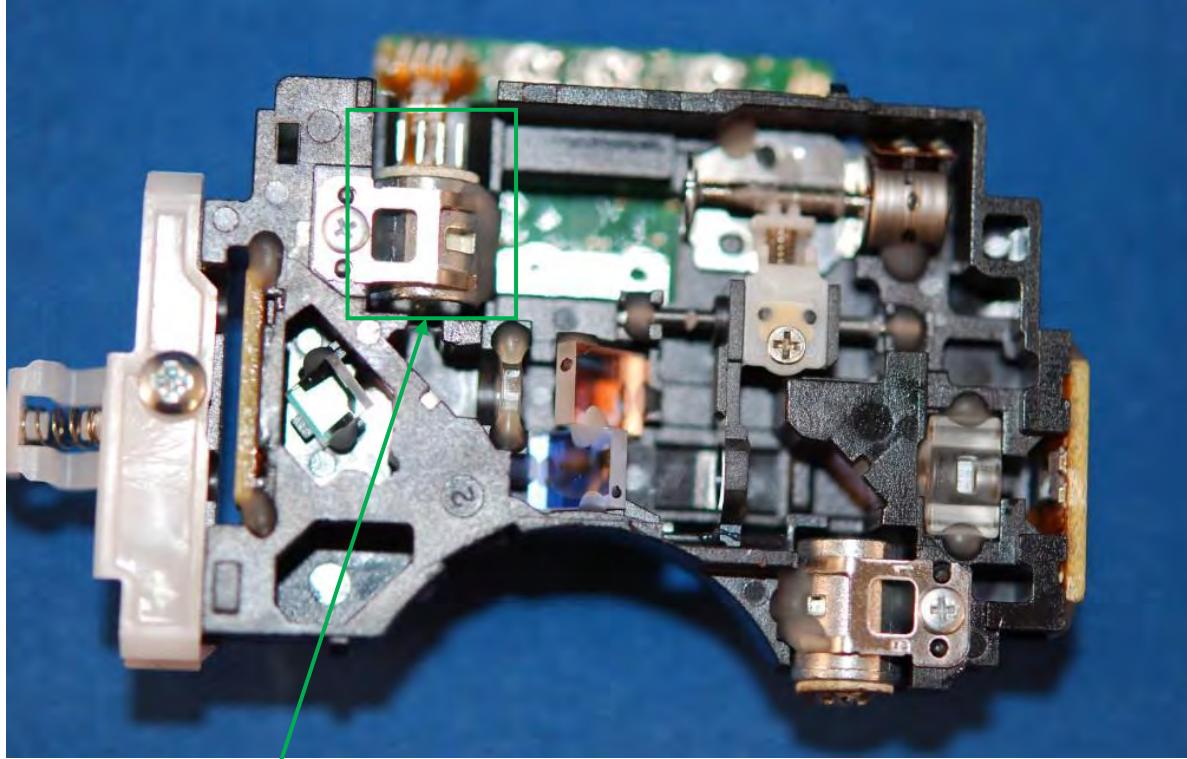
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
	<p><i>Photograph of the optical pickup head from bottom with the back plate removed</i></p>  A close-up photograph of the internal components of an optical pickup head, viewed from the bottom with the back plate removed. The image shows a complex assembly of metal brackets, a central laser module with a red laser diode, and various optical lenses and mirrors. A green printed circuit board (PCB) is visible in the background. The entire assembly is mounted on a black base plate.

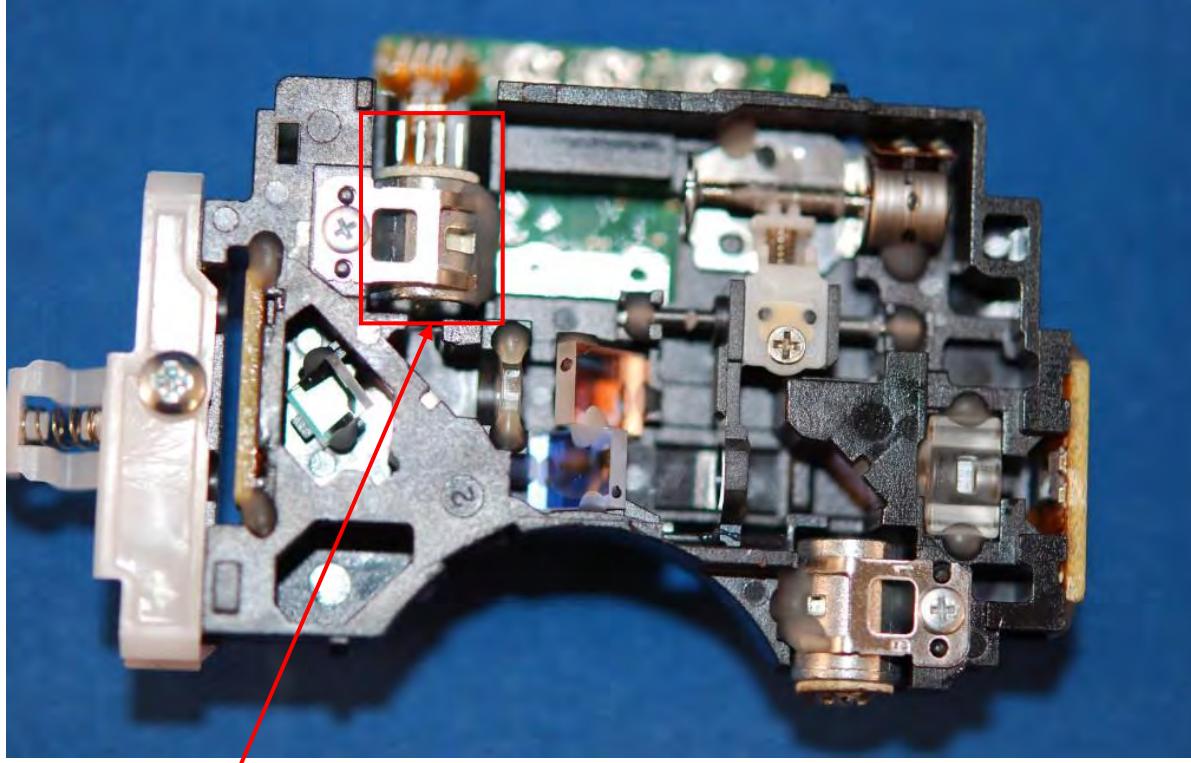
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
9b. a first laser beam generator and	 <p data-bbox="734 1225 1009 1323">FIRST AND SECOND LASER BEAM GENERATORS</p>

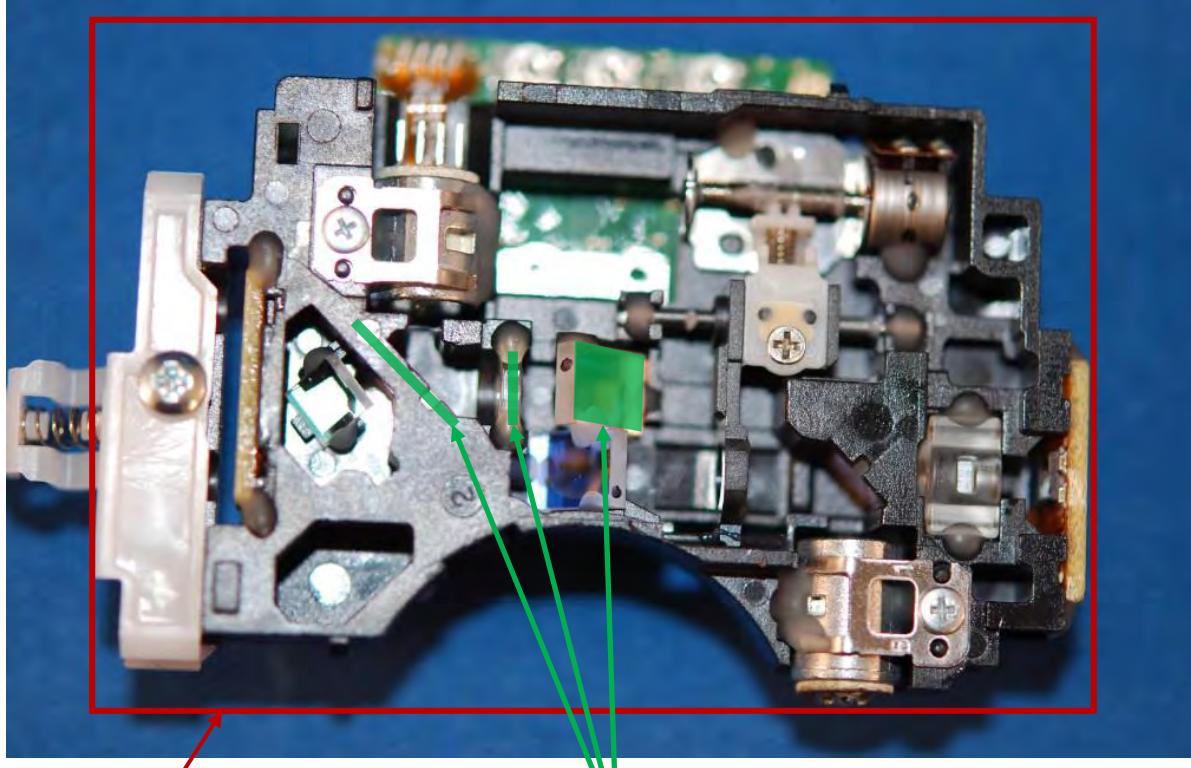
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
9c. a second laser beam generator, for generating a first laser beam and a second laser beam of different wavelengths,	 <p data-bbox="705 1188 979 1295">FIRST AND SECOND LASER BEAM GENERATORS</p> <p data-bbox="530 1318 1755 1356">CD and DVD use 780 nm and 650nm red lasers, respectively, Blu-ray uses a 405 nm blue laser</p>

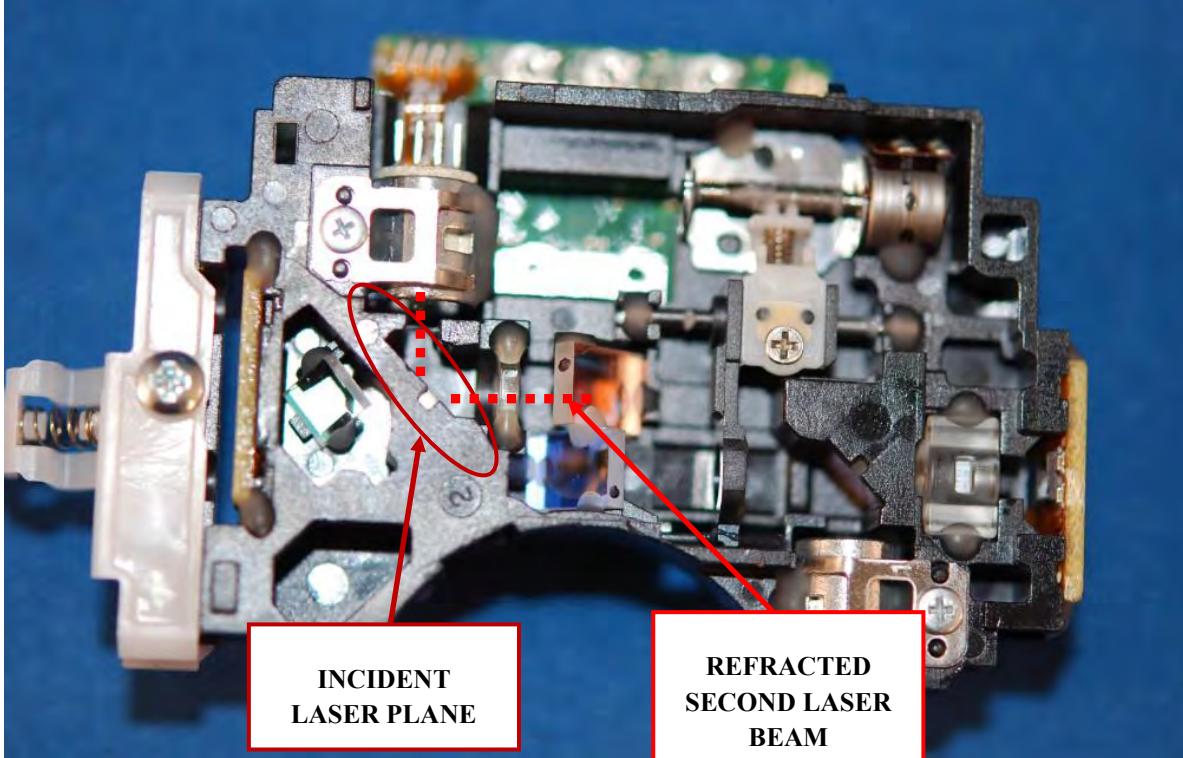
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
9d. a beam shaper, allocated in optical paths of said first and second laser beams, and formed with a plurality of planes locating in different angles, comprising:	 <p data-bbox="620 1246 895 1328">BEAM SHAPER</p> <p data-bbox="1043 1197 1360 1328">PLURALITY OF PLANES</p>

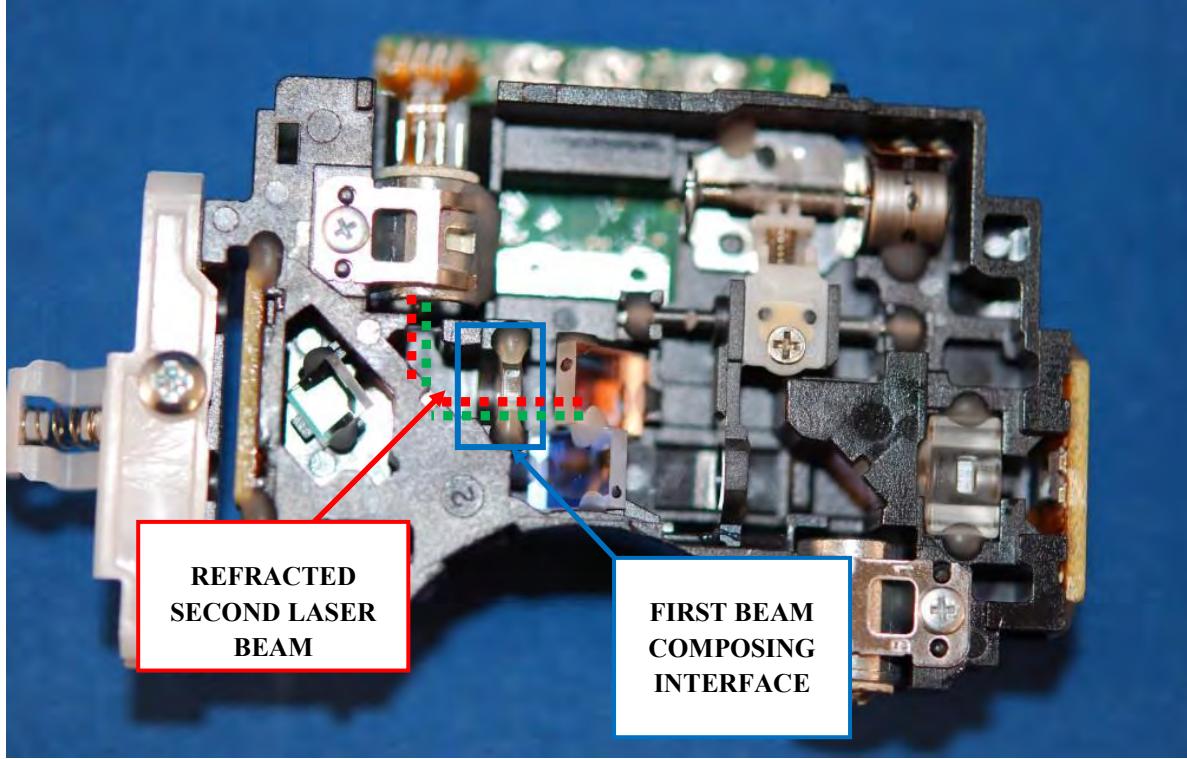
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
9e. an incident laser plane for refracting said second laser beam, to generate a refracted second laser beam;	 <p data-bbox="623 1166 1341 1281">Legend: SECOND LASER BEAM -----</p>

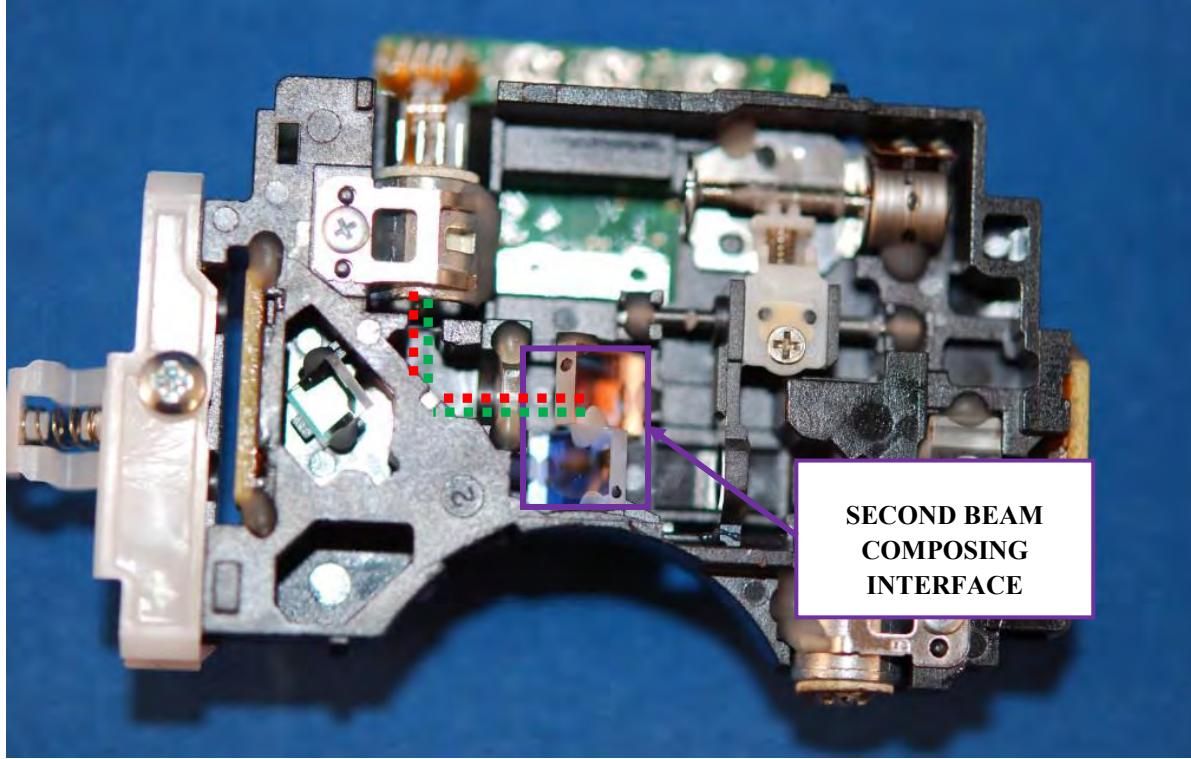
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
9f. a first beam-composing interface for composing said refracted second laser beam with said first laser beam into an optical output path;	 <p data-bbox="614 1160 1347 1274">Legend: SECOND LASER BEAM ••••• FIRST LASER BEAM ••••••</p>

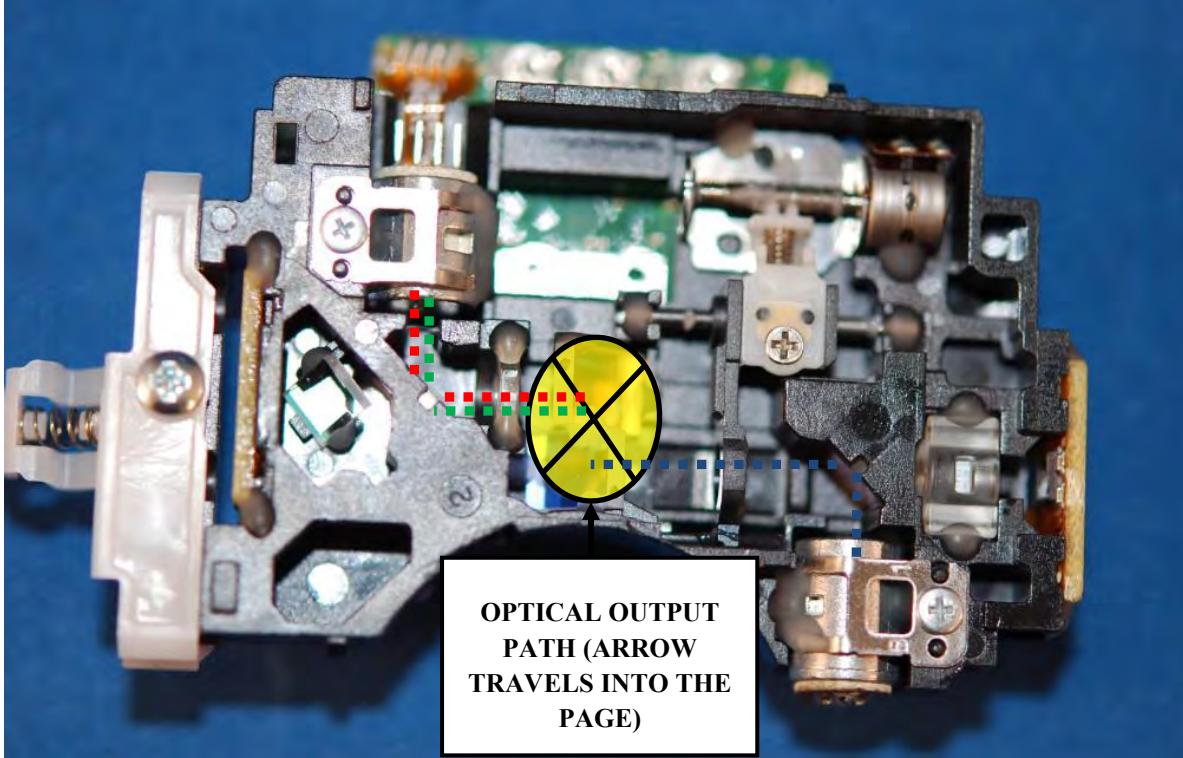
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
9g. a second beam-composing interface for composing said first and second laser beams,	 <p data-bbox="599 1152 1347 1274">Legend: SECOND LASER BEAM ••••• FIRST LASER BEAM ••••••</p>

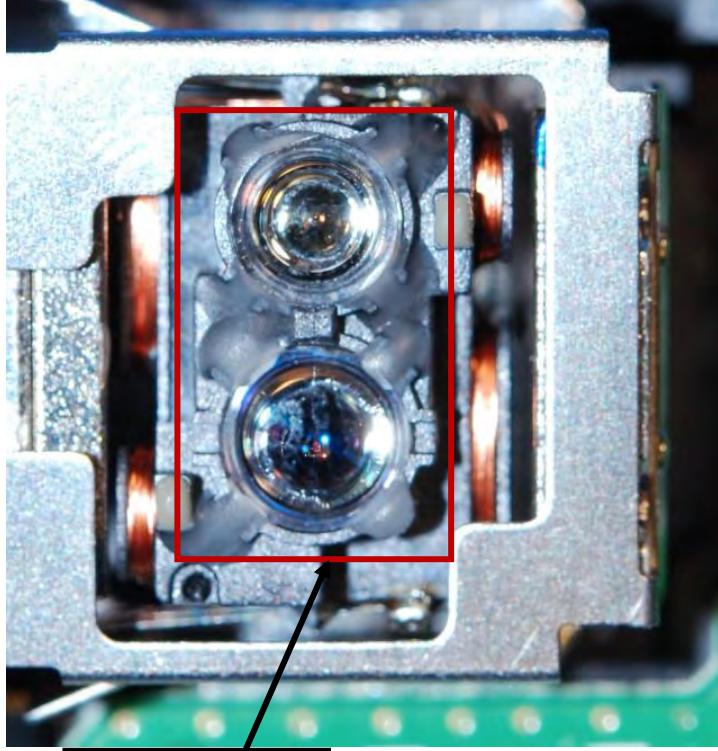
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
9h. after they are being composed by said first beam-composing interface, with a third laser beam into said optical output path;	 <p data-bbox="1056 938 1341 1101">OPTICAL OUTPUT PATH (ARROW TRAVELS INTO THE PAGE)</p> <p data-bbox="623 1183 1446 1330">Legend: SECOND LASER BEAM ••••• FIRST LASER BEAM ••••• THIRD LASER BEAM (BLUE-RAY) •••••</p>

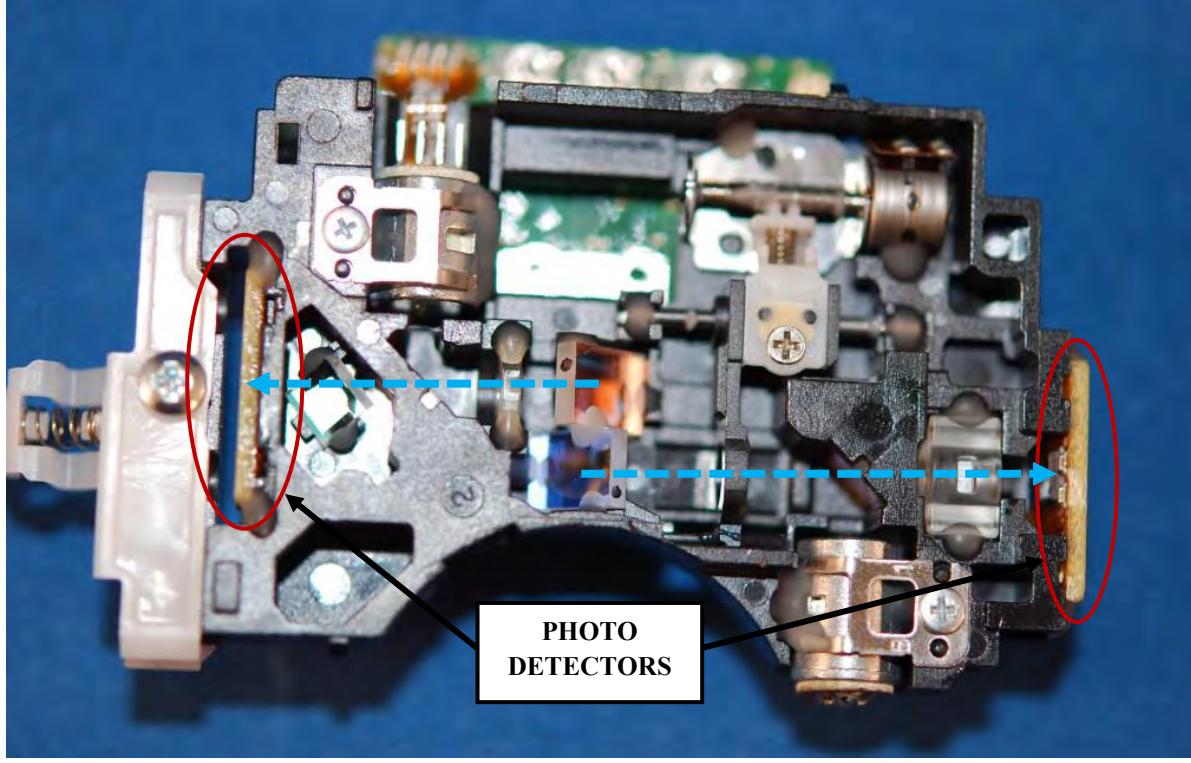
U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
9i. an objective lens for focusing laser beams in said optical output path onto said optical recording media as an reading/writing spot; and	 <p data-bbox="925 1155 1184 1302">AT LEAST ONE OBJECTIVE LENS</p>

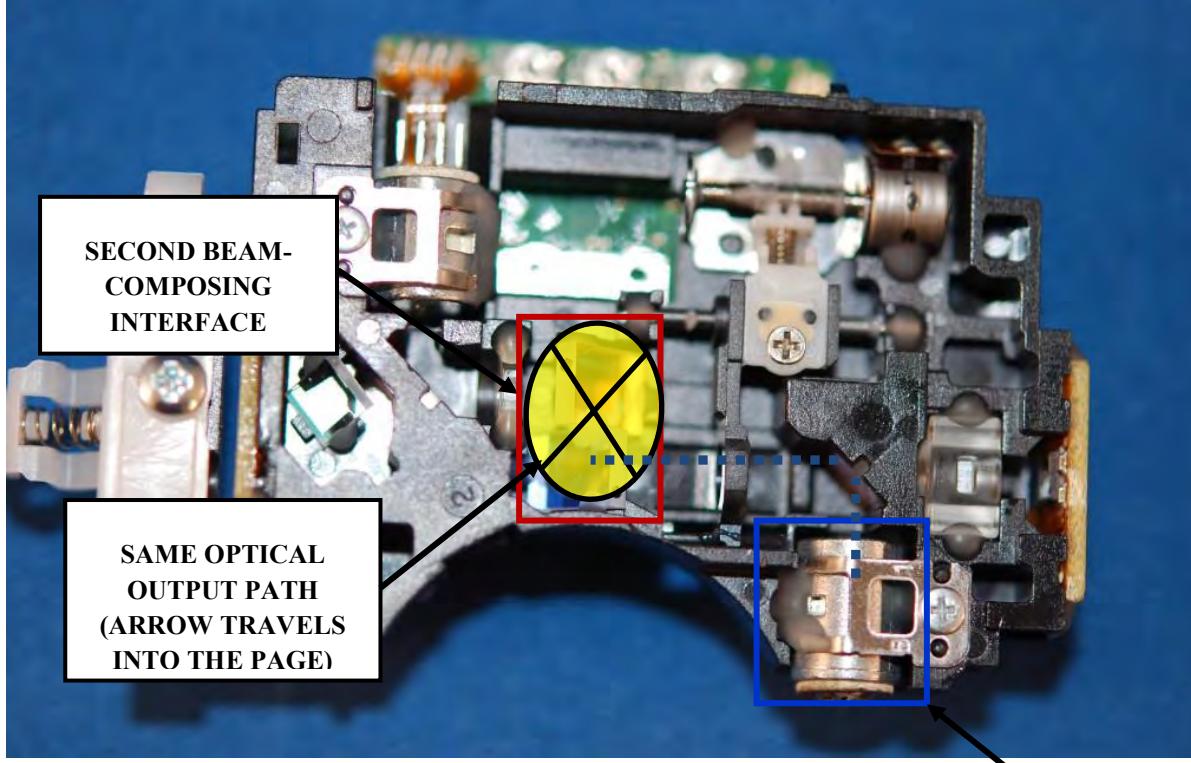
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CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
9j. a photo detector for transforming a reflective laser beam returning from said optical recording media into corresponding signals and accomplishing data retrieval;	 <p data-bbox="599 1160 1347 1286">Legend: REFLECTIVE LASER BEAM</p>

U.S. Patent No. 6,324,150

Exhibit A5

CLAIM ELEMENT (USP 6,324,150)	EVIDENCE FROM PRODUCT (LG BP530, BP730, BD610, BH6730S, BH9430PW AND BH9431PW)
9k. wherein said third laser beam is an incident laser beam generated by a third laser beam generator, refracted to said second beam-composing interface and composed into same optical output path.	 <p data-bbox="614 1176 1353 1290">Legend: THIRD LASER BEAM</p> <p data-bbox="1516 1176 1854 1307">THIRD LASER BEAM GENERATOR (BLU-RAY)</p>

U.S. Patent No. 7,542,384
Exhibit B1

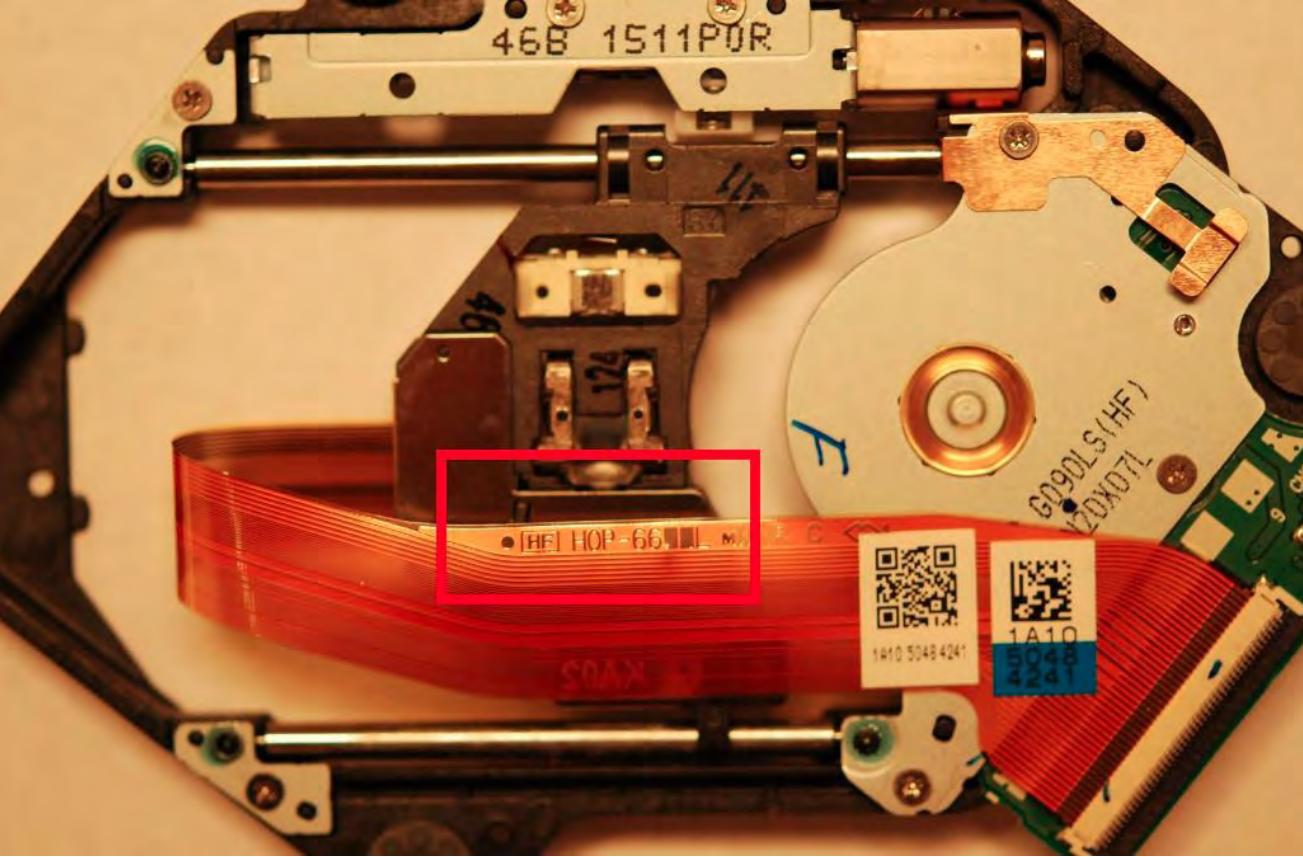
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
12. An <u>objective lens actuator</u> , comprising: ¹	<p>Each element of this claim, except where noted otherwise, and each element of the asserted claims dependent thereon, is present literally and/or under the doctrine of equivalents in the accused LG Products.²</p> <p>ITRI provides these infringement contentions before obtaining complete discovery and disclosures from LG. Specifically, LG has not produced documentation sufficient to demonstrate how each and every optical pickup head operates, and has not produced documentation sufficient to demonstrate that it has identified every LG document corresponding to accused optical pickup heads. Further, LG has “confirmed” that particular LG products utilize certain optical pickup heads that are not borne out by physical inspection. ITRI expects that LG will produce information to fully meet its discovery obligations regarding LG’s instrumentalities beyond that which is publically available. Accordingly, ITRI reserves the right to modify these infringement contentions based upon LG’s document production and required disclosures.</p>

¹ ITRI contends that the preamble to this claim is not limiting in any manner. ITRI’s references to the accused product regarding the preamble are for illustration only and do not constitute an admission that the preamble is limiting.

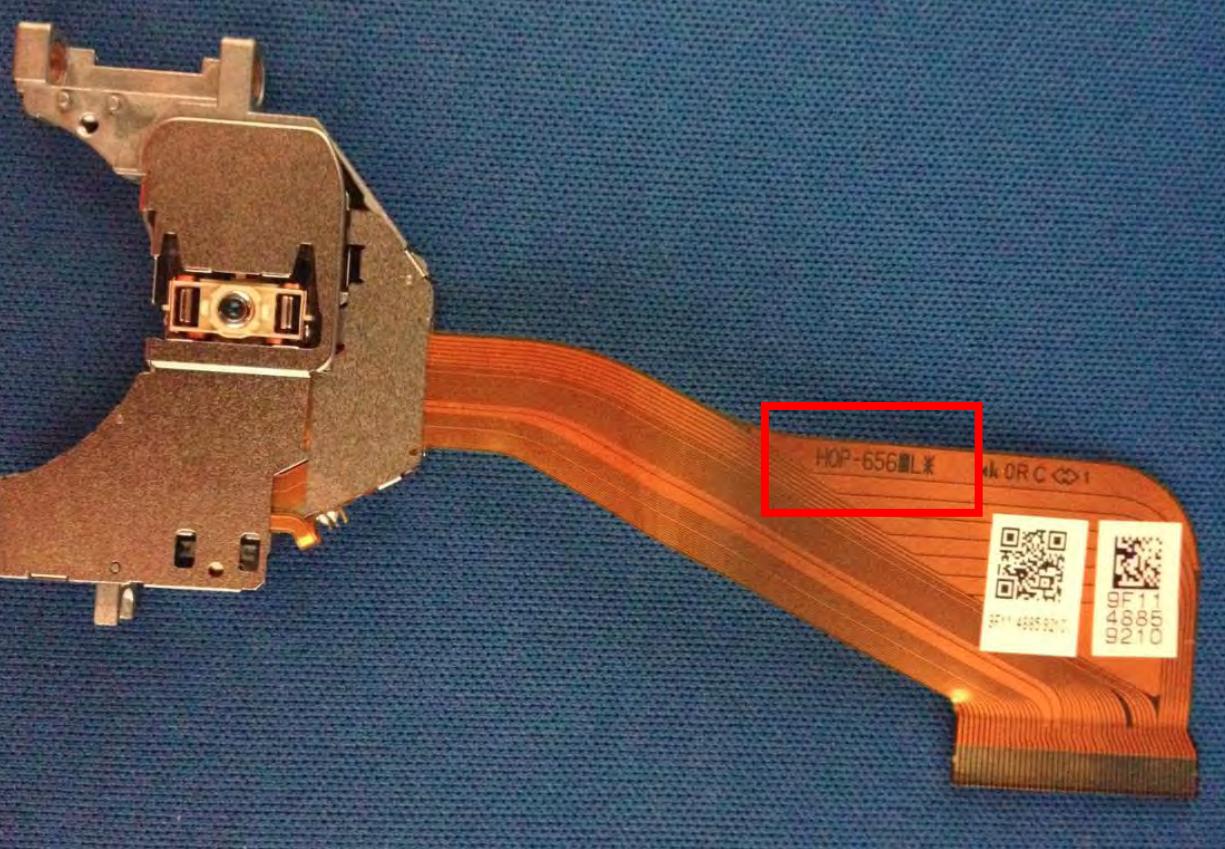
² The LG Products often practice the claim elements in numerous alternative ways in accordance with the present chart. The LG Products should be assumed to act alone or in combination as referenced herein and interpreted in the singular or plural accordingly. LG further provides the LG Products as well as the instructions to customers/users causing them to use the accused products in an infringing manner, including, without limitation, in their default and expected uses.

To the extent each element of this claim, and the asserted claims dependent thereon are not present literally in the accused LG Products, each element is present under the doctrine of equivalents because there is no substantial difference between the elements of the asserted claims and the corresponding functionality in the accused instrumentality, *i.e.*, the corresponding functionality in the accused product performs substantially the same function, in substantially the same way to achieve substantially the same results as the claimed elements.

U.S. Patent No. 7,542,384
Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
	<p>Upon physical inspection, the following products use optical pickup units (“OPUs”) that are identical for infringement analysis: GP08LU30, GP08LU11, GP10NB20, GT30L, and GP40LB10. As shown below, the GP40LB10 uses OPU HOP-6611L:</p> 

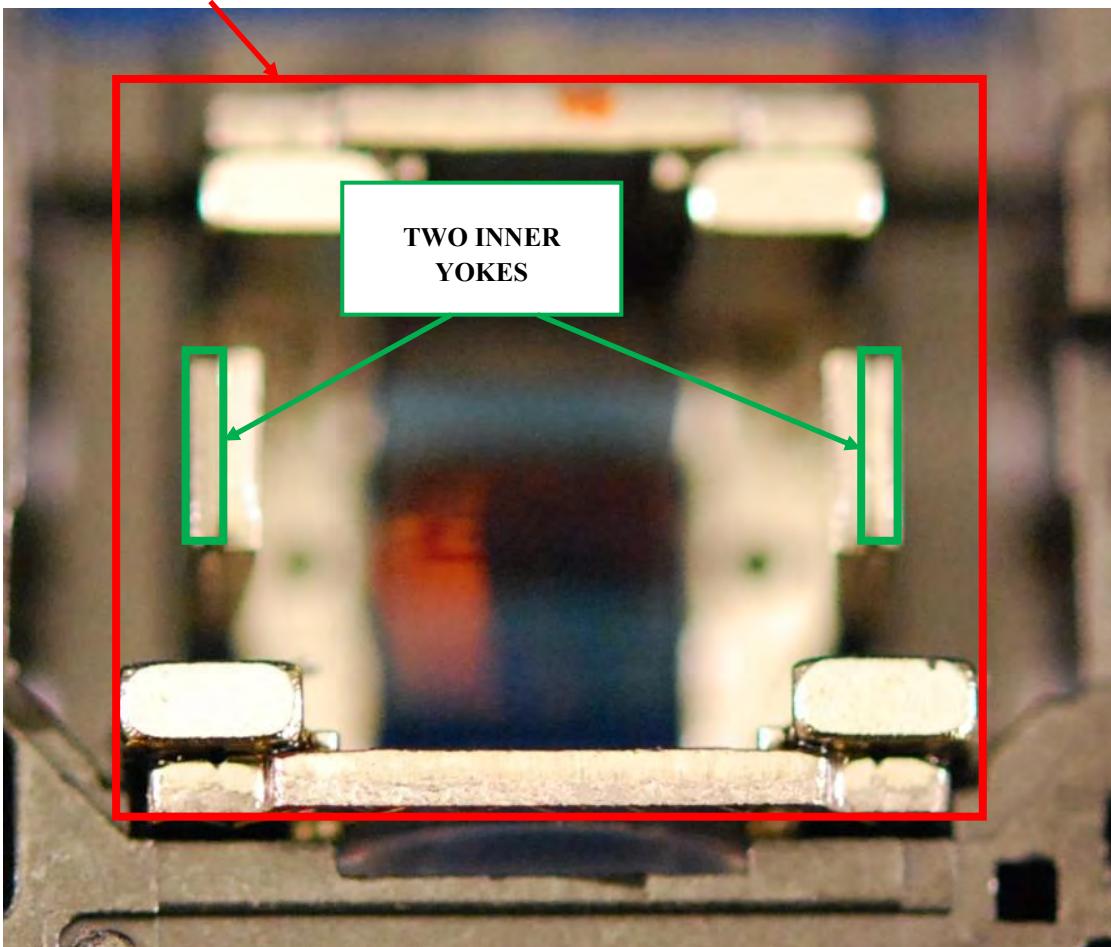
U.S. Patent No. 7,542,384
Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
	<p>As shown below, the GP08LU11 uses OPU HOP-6561L.</p>  <p>Because these OPUs are physically similar, all products that use either the HOP-6611L or HOP-6561L are infringe in a similar manner to the products physically inspected for this chart.</p>

U.S. Patent No. 7,542,384
Exhibit B1

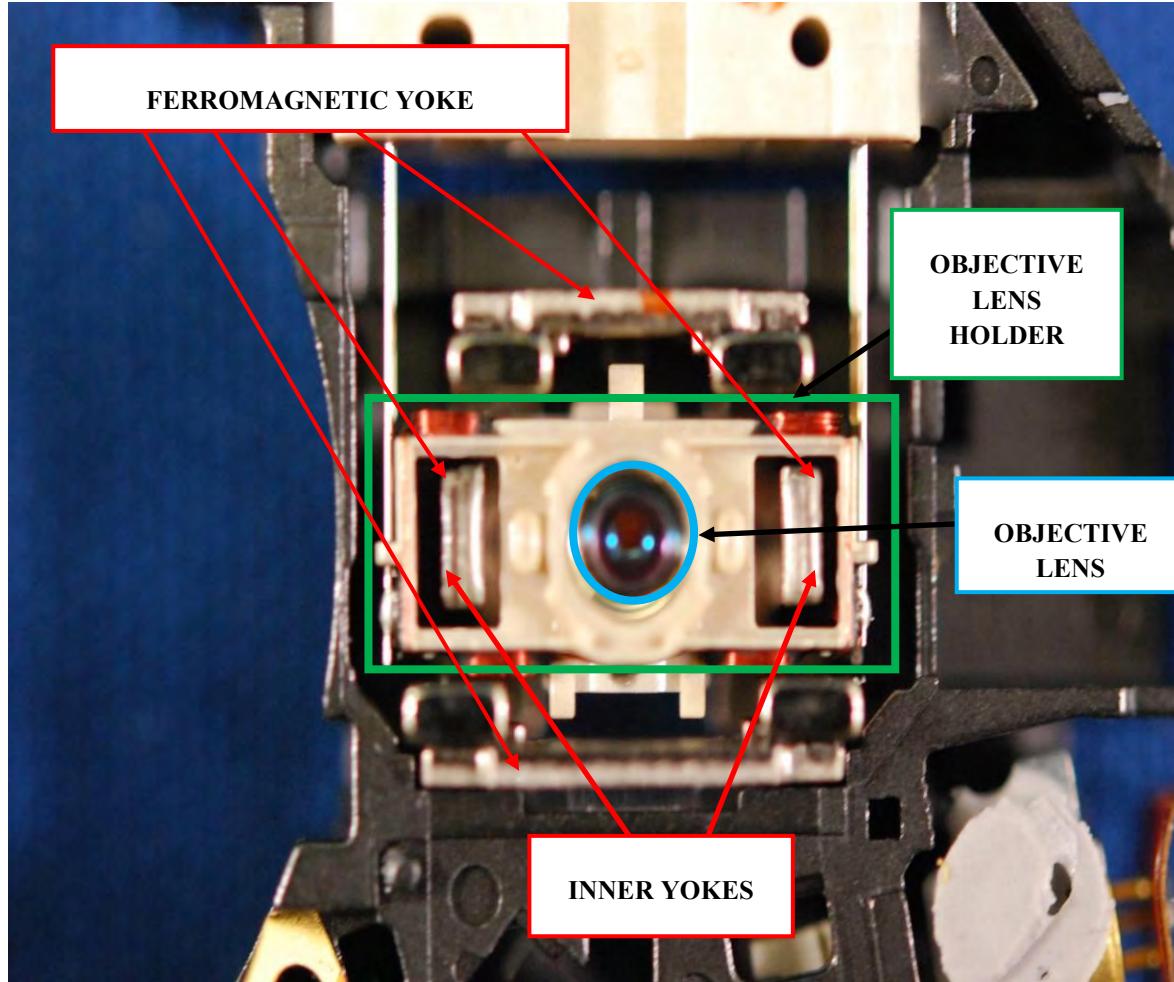
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
	<p>REDACTED</p> <p>REDACTED</p> <p>REDACTED</p>

U.S. Patent No. 7,542,384
Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
12a. a <u>ferromagnetic yoke</u> including <u>two inner yokes</u> ;	<p data-bbox="834 344 1362 368">FERROMAGNETIC YOKE from GP08LU30</p>  <p data-bbox="1079 589 1254 654">TWO INNER YOKES</p>

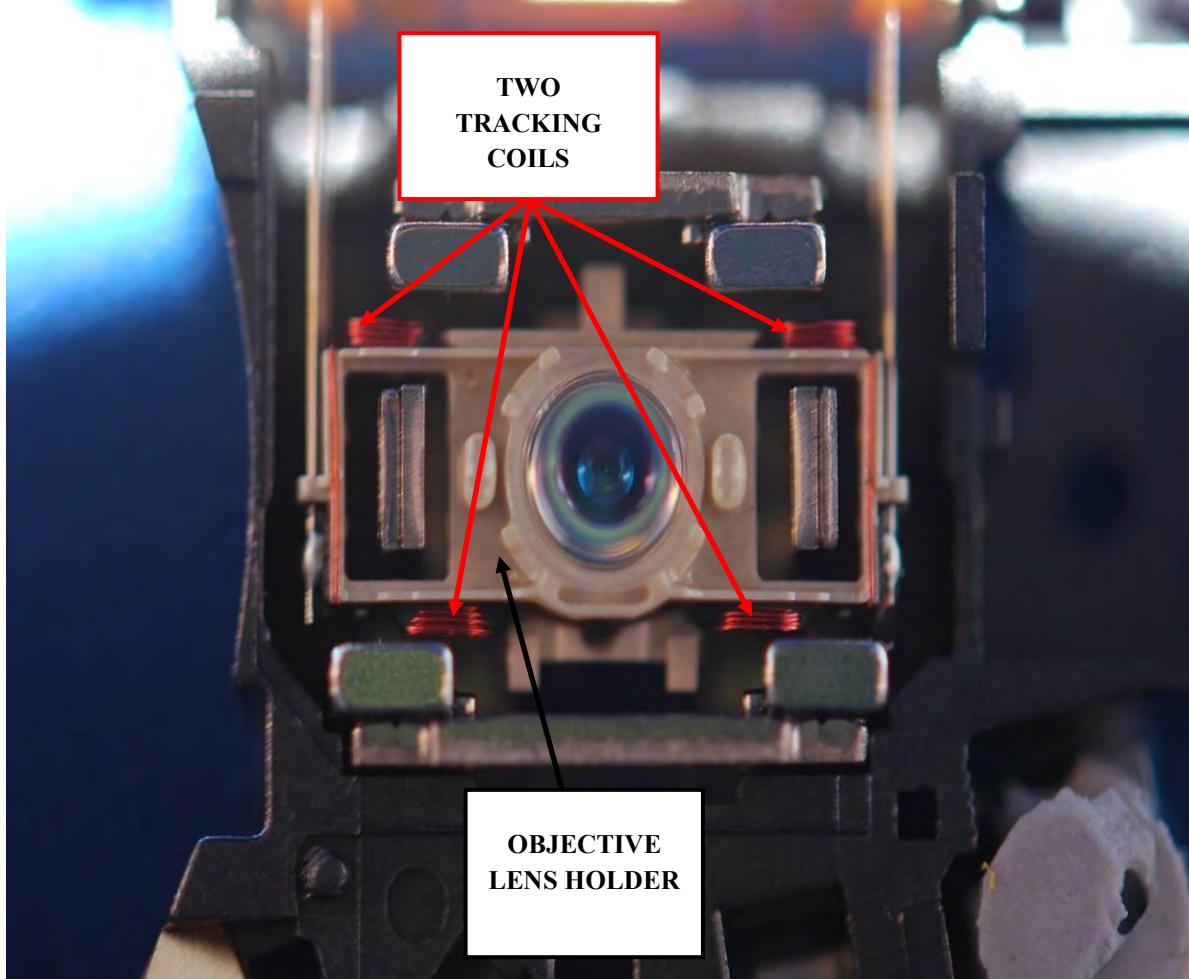
U.S. Patent No. 7,542,384

Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
12b. an <u>objective lens holder</u> movably located on the ferromagnetic yoke corresponding to the <u>inner yokes</u> for holding an objective lens;	 <p>The image shows a close-up of a mechanical assembly, likely a component of a magnetic device. A red rectangular box labeled 'FERROMAGNETIC YOKE' points to a dark, metallic structure at the top. A green rectangular box labeled 'OBJECTIVE LENS HOLDER' points to a black, rectangular component. A blue circle highlights the 'OBJECTIVE LENS' itself, which is held in the holder. Two red arrows point from a red rectangular box labeled 'INNER YOKES' to two small, rectangular metallic components located on the side of the main assembly, flanking the objective lens.</p>

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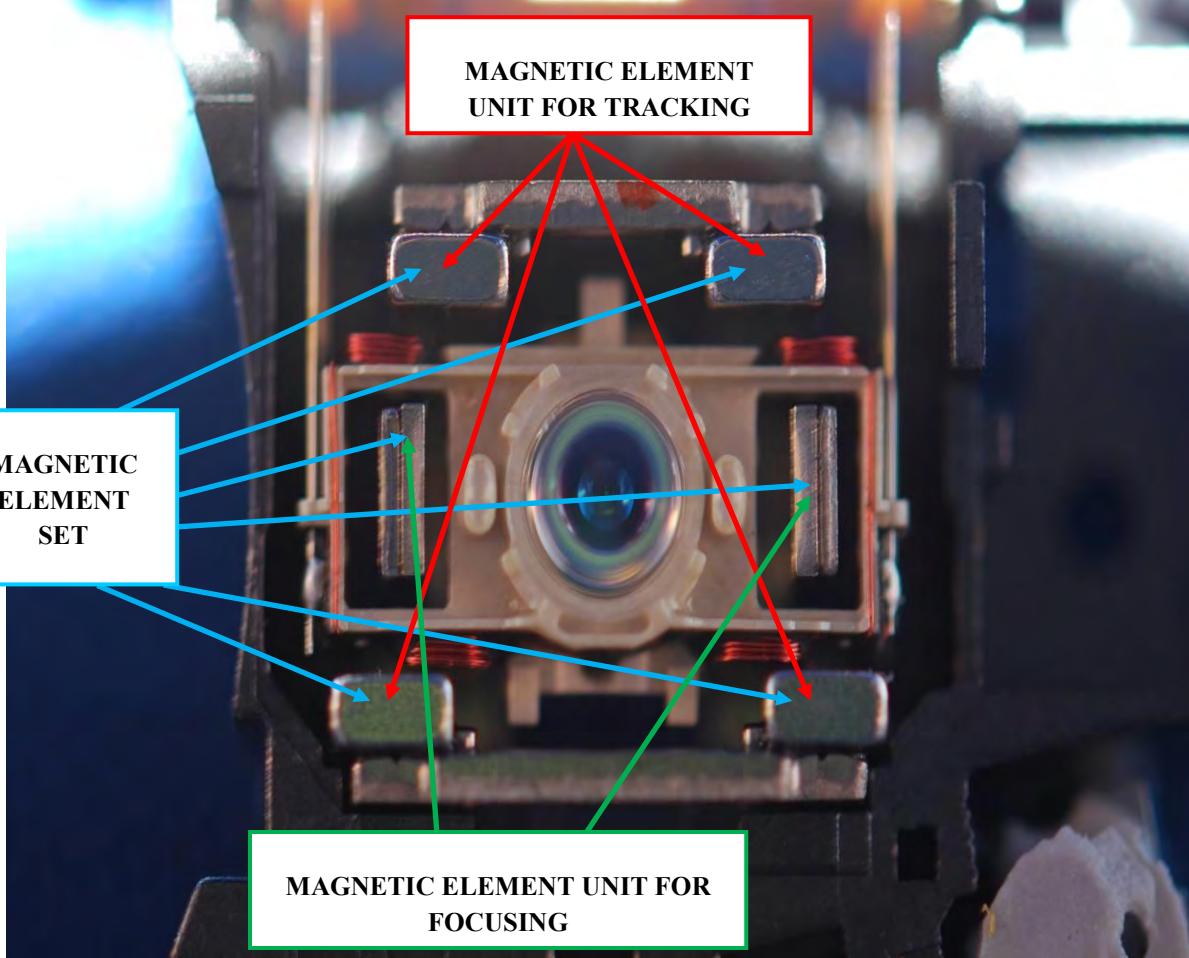
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
12c. <u>two tracking coils</u> and <u>two focusing coils</u> which are respectively located on two opposite sides of the objective lens holder	 <p>A close-up photograph of an objective lens holder. The lens holder is a rectangular metal frame containing a central objective lens. Two red rectangular coils are attached to the top and bottom of the lens holder, positioned on opposite sides. A red box labeled "TWO TRACKING COILS" is overlaid on the top coils, and a black box labeled "OBJECTIVE LENS HOLDER" is overlaid on the lens itself. The background is dark and out of focus.</p>

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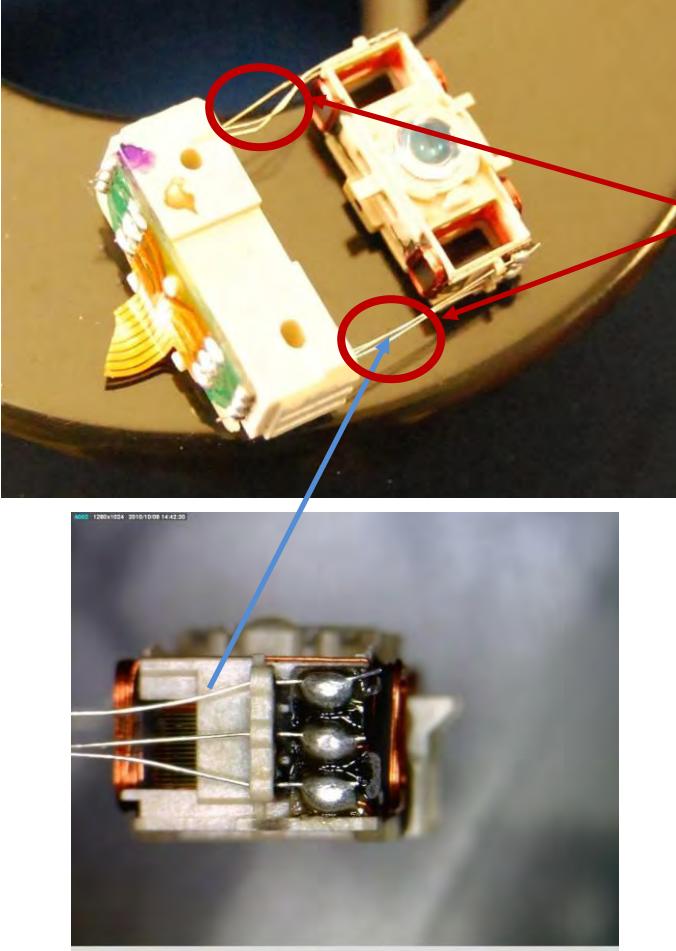
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
12d. and located on the other two opposite sides of the objective lens holder and surrounded with the two inner yokes;	<p data-bbox="633 342 1837 1289">A close-up photograph of a mechanical assembly, likely a lens holder. The assembly is made of a light-colored plastic or metal frame. In the center, there is a blue objective lens. Surrounding the lens are several copper-colored coils and a central objective lens holder. Three callout boxes are present: a red box labeled 'TWO TRACKING COILS' points to two coils located on the top and bottom sides of the frame; a black box labeled 'OBJECTIVE LENS HOLDER' points to the central frame structure holding the lens; and a green box labeled 'FOCUSING COILS' points to two coils located on the left and right sides of the frame. The photograph has a timestamp in the top left corner: 'AD13 1280x1024 2010/10/08 15:50:39'.</p>

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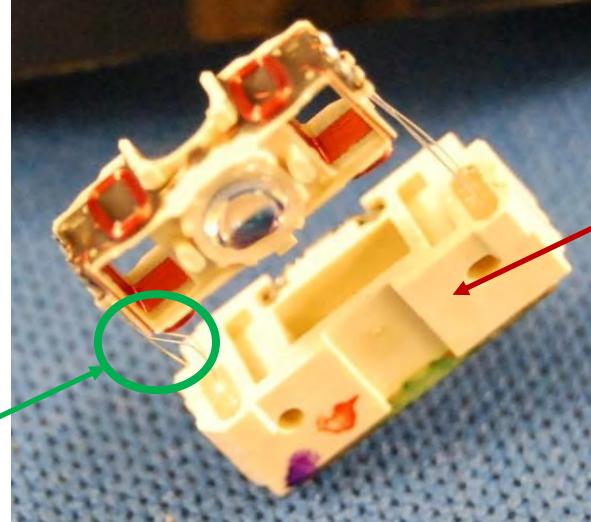
Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
12e. a <u>magnetic element set</u> located on the ferromagnetic yoke corresponding to the tracking coils and the focusing coils to generate a magnetic field perpendicular to the optical axis of the objective lens;	 <p data-bbox="593 763 819 926">MAGNETIC ELEMENT SET</p> <p data-bbox="1100 393 1396 458">MAGNETIC ELEMENT UNIT FOR TRACKING</p> <p data-bbox="925 1209 1362 1274">MAGNETIC ELEMENT UNIT FOR FOCUSING</p> The photograph shows a close-up of a lens assembly. A blue box labeled 'MAGNETIC ELEMENT SET' points to a group of rectangular components on the left side of the lens. A red box labeled 'MAGNETIC ELEMENT UNIT FOR TRACKING' points to a pair of rectangular components positioned above the lens. A green box labeled 'MAGNETIC ELEMENT UNIT FOR FOCUSING' points to a pair of rectangular components positioned below the lens. The lens itself is a clear, cylindrical component in the center.

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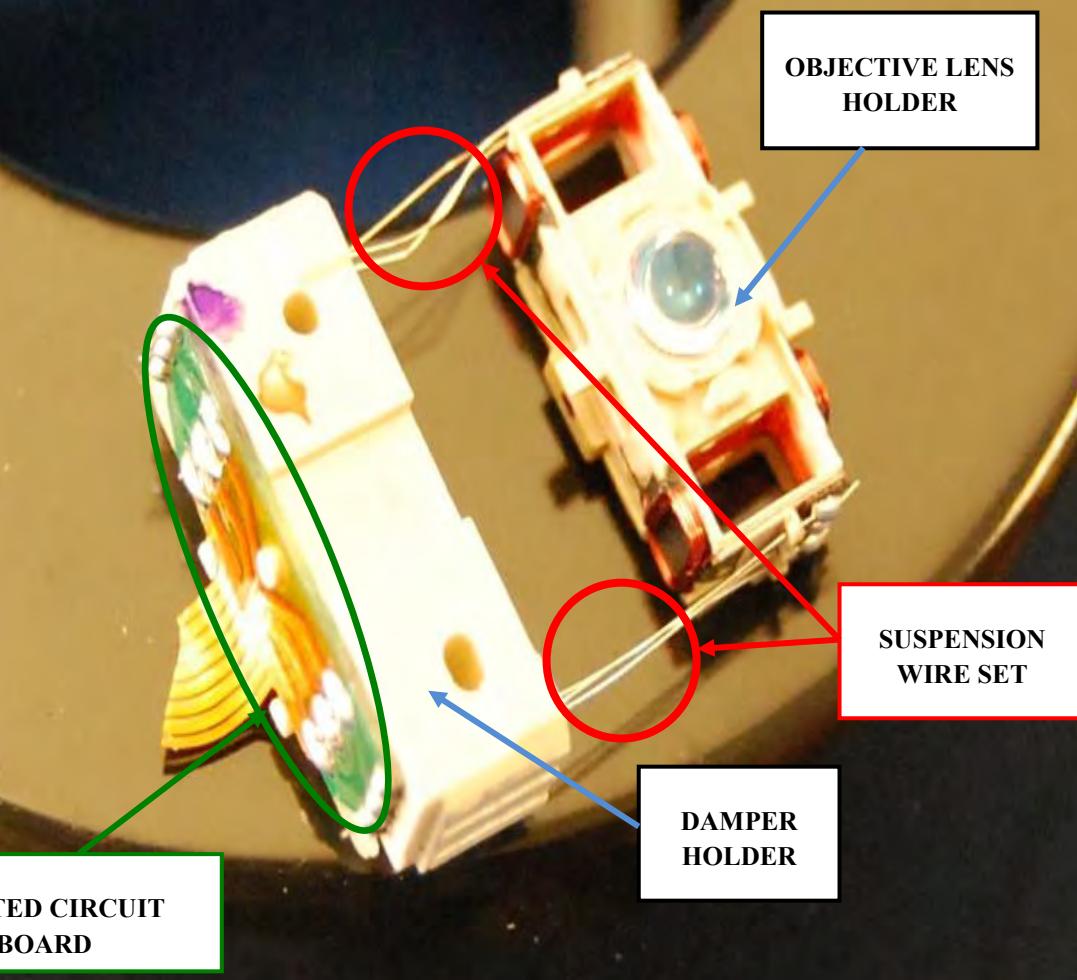
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
12f. <u>a suspension wire set</u> connecting to the objective lens holder, the tracking coils, and the focusing coils to hang the objective lens holder and channel current to the tracking coils and the focusing coils;	

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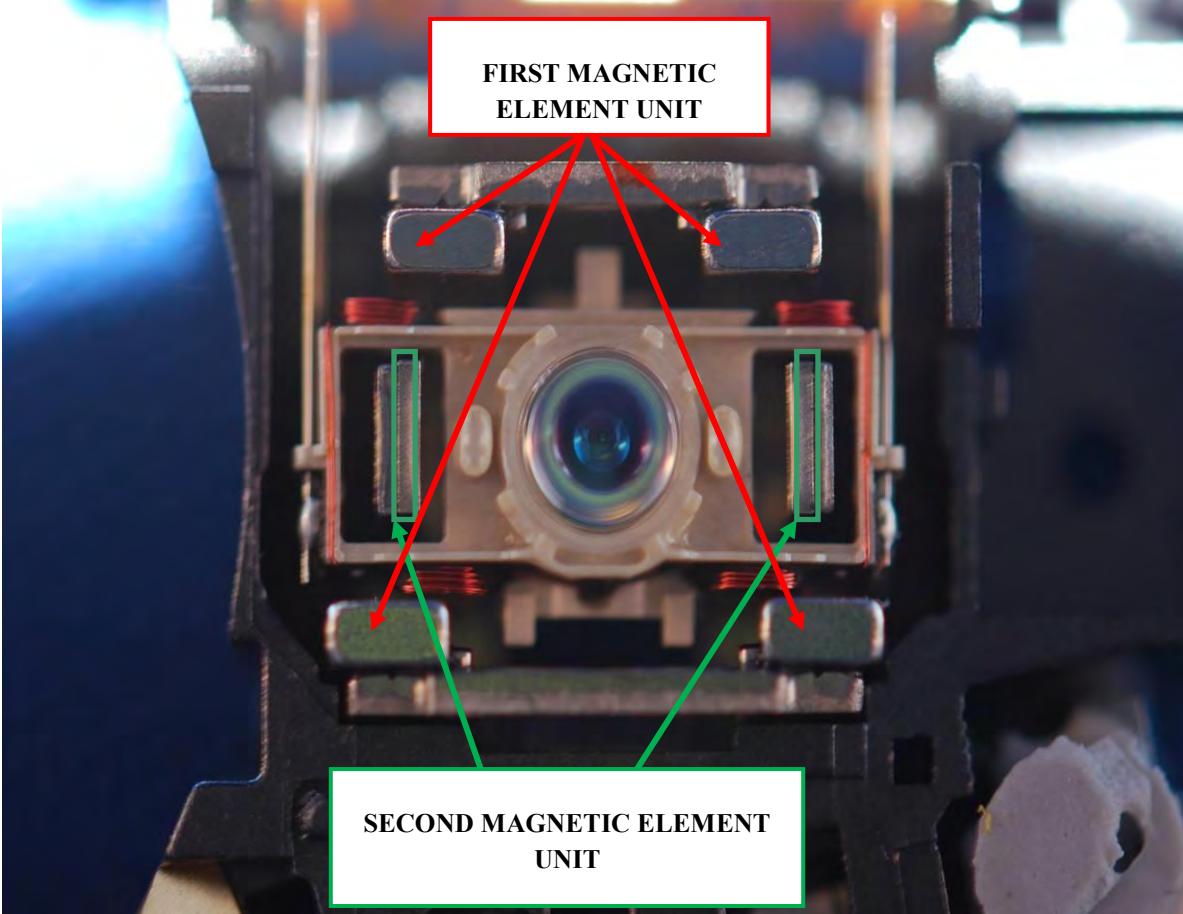
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
12g. <u>a damper holder located on the ferromagnetic yoke to allow the suspension wire set to pass through</u> ; and	 <p data-bbox="601 742 855 873">SUSPENSION WIRE SET</p> <p data-bbox="1552 465 1742 595">DAMPER HOLDER</p> A photograph of a mechanical assembly, likely a component of an electric motor. The assembly is gold-colored and features several red and blue plastic or ceramic parts. A green circle highlights a specific area where a suspension wire set is attached. A red box labeled 'DAMPER HOLDER' points to a slot or opening in the assembly where a suspension wire set is visible passing through.

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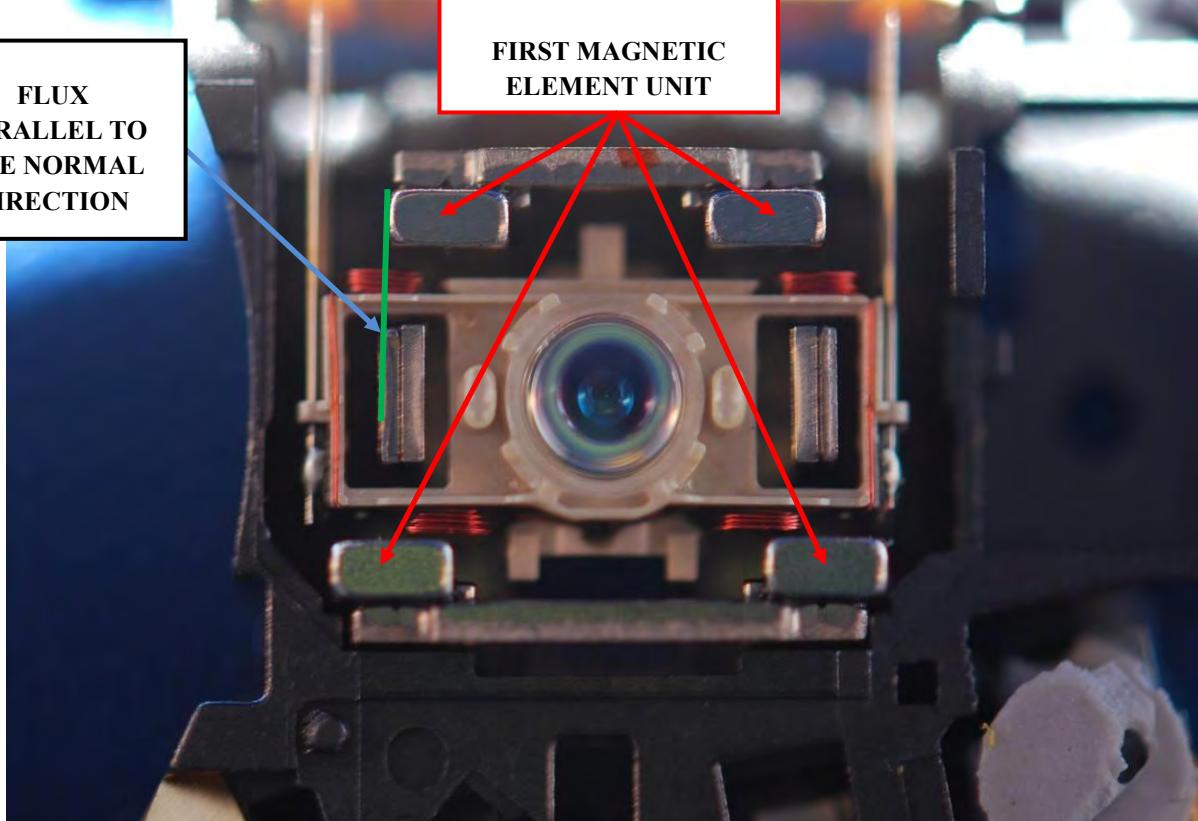
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
<p>12h. <u>a printed circuit board</u> located on the damper holder and surrounded with the <u>suspension wire set</u> to provide the current to the tracking coils and the focusing coils to drive the objective lens holder,</p>	 <p>PRINTED CIRCUIT BOARD</p> <p>OBJECTIVE LENS HOLDER</p> <p>SUSPENSION WIRE SET</p> <p>DAMPER HOLDER</p>

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CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
12i. wherein the magnetic element set includes a <u>first magnetic element unit</u> and a <u>second magnetic element unit</u> ,	 <p>A close-up photograph of a camera module. The module features a central lens element. Two rectangular metal components are positioned above and below the lens, connected by a central vertical post. A red rectangular callout box labeled "FIRST MAGNETIC ELEMENT UNIT" is positioned above the top component, with two red arrows pointing to it. A green rectangular callout box labeled "SECOND MAGNETIC ELEMENT UNIT" is positioned below the bottom component, with two green arrows pointing to it.</p>

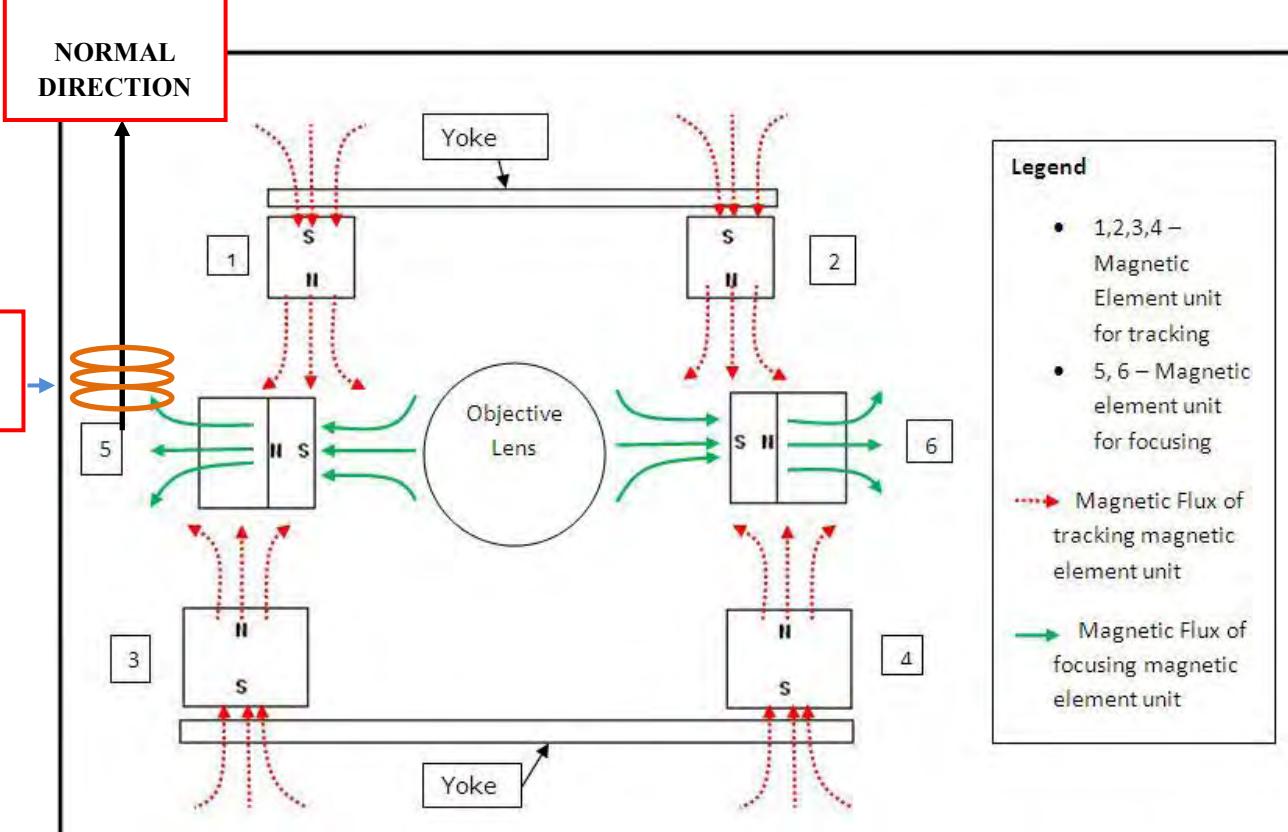
U.S. Patent No. 7,542,384

Exhibit B1

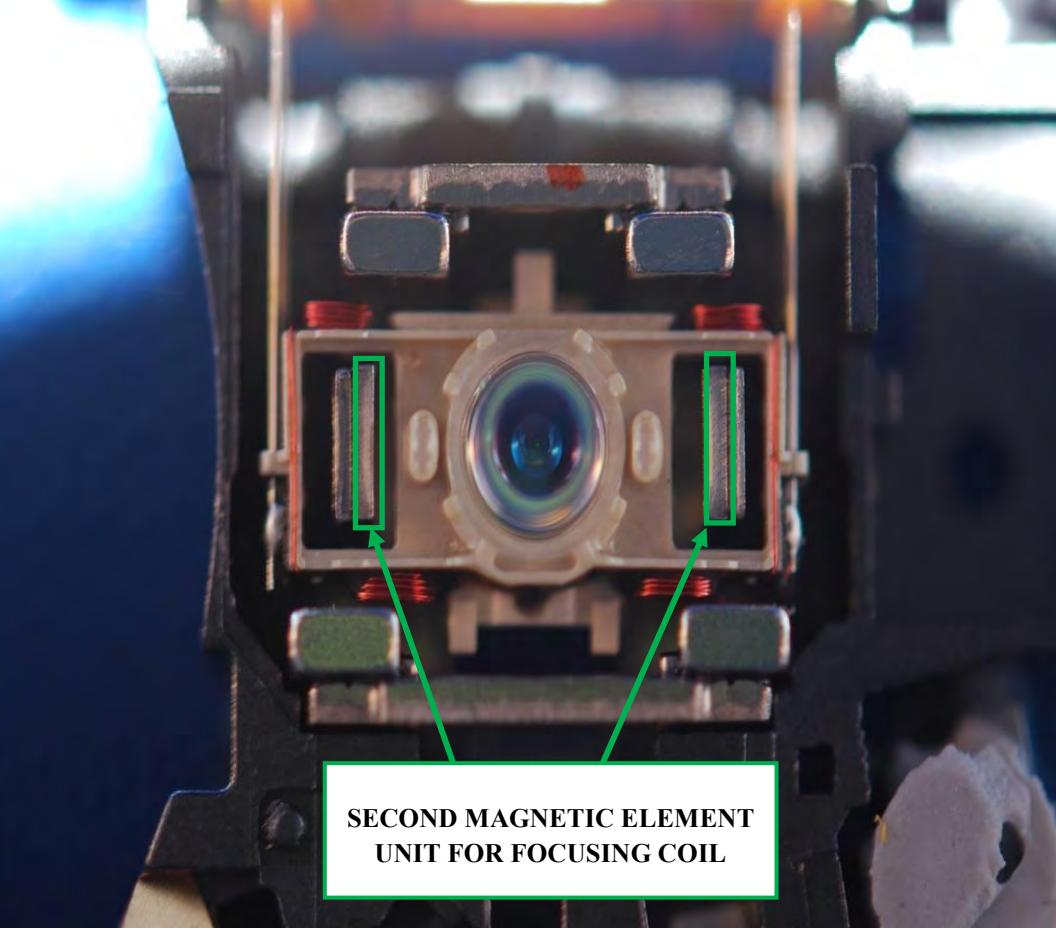
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
12j. the first magnetic element unit having a magnetic flux direction parallel with a normal direction of the an area which the tracking coils surround,	 <p data-bbox="572 376 825 572">FLUX PARALLEL TO THE NORMAL DIRECTION</p> <p data-bbox="1115 344 1410 442">FIRST MAGNETIC ELEMENT UNIT</p> A close-up photograph of a mechanical assembly, specifically a magnetic element unit. The unit is rectangular with a central circular component, possibly a lens or a sensor. Four red arrows point from a white rectangular callout box labeled 'FIRST MAGNETIC ELEMENT UNIT' to the four corners of the unit's frame. A blue arrow points from another white rectangular callout box labeled 'FLUX PARALLEL TO THE NORMAL DIRECTION' to a vertical slot or gap on the left side of the unit's frame.

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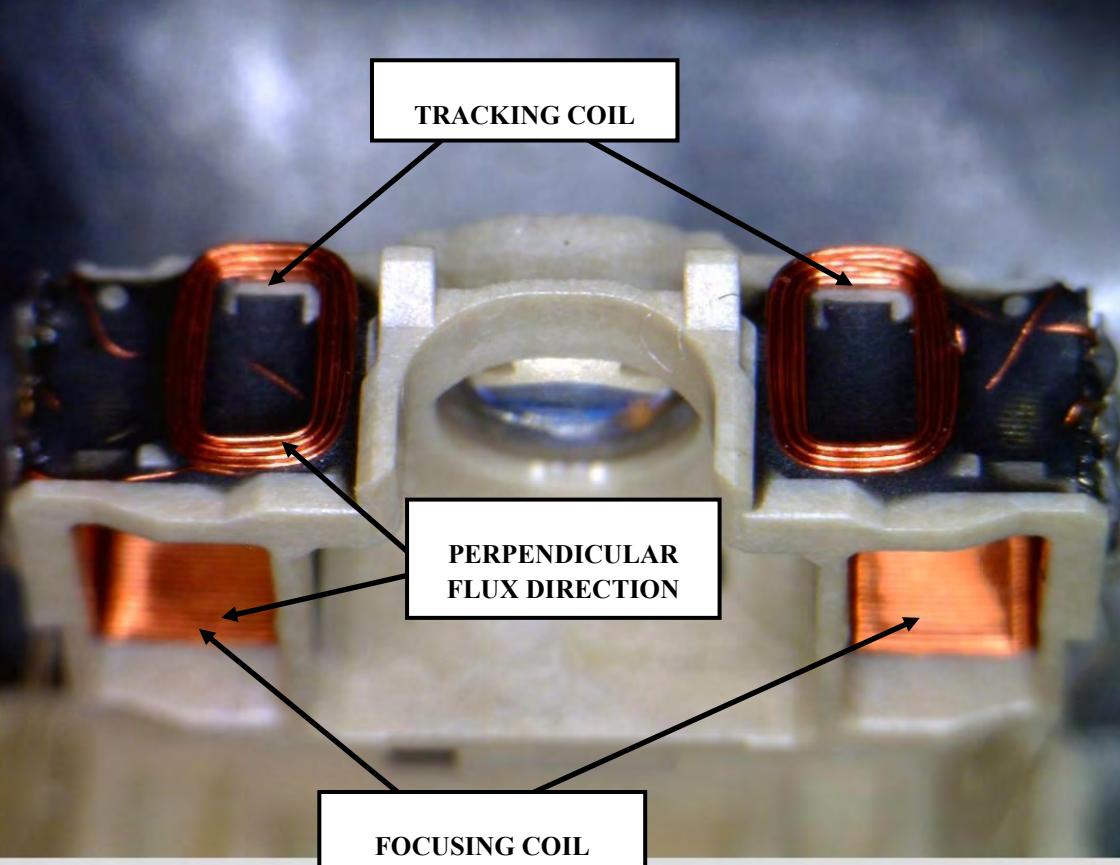
Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
	 <p>NORMAL DIRECTION</p> <p>TRACKING COILS</p> <p>Legend</p> <ul style="list-style-type: none"> 1,2,3,4 – Magnetic Element unit for tracking 5,6 – Magnetic element unit for focusing <p>..... Magnetic Flux of tracking magnetic element unit</p> <p>→ Magnetic Flux of focusing magnetic element unit</p> <p><i>Magnetic flux diagram of the magnetic set (top view layout). The red flux lines (dotted) corresponding to the first magnetic element unit are parallel to the normal direction of the area which the tracking coils surround.</i></p>

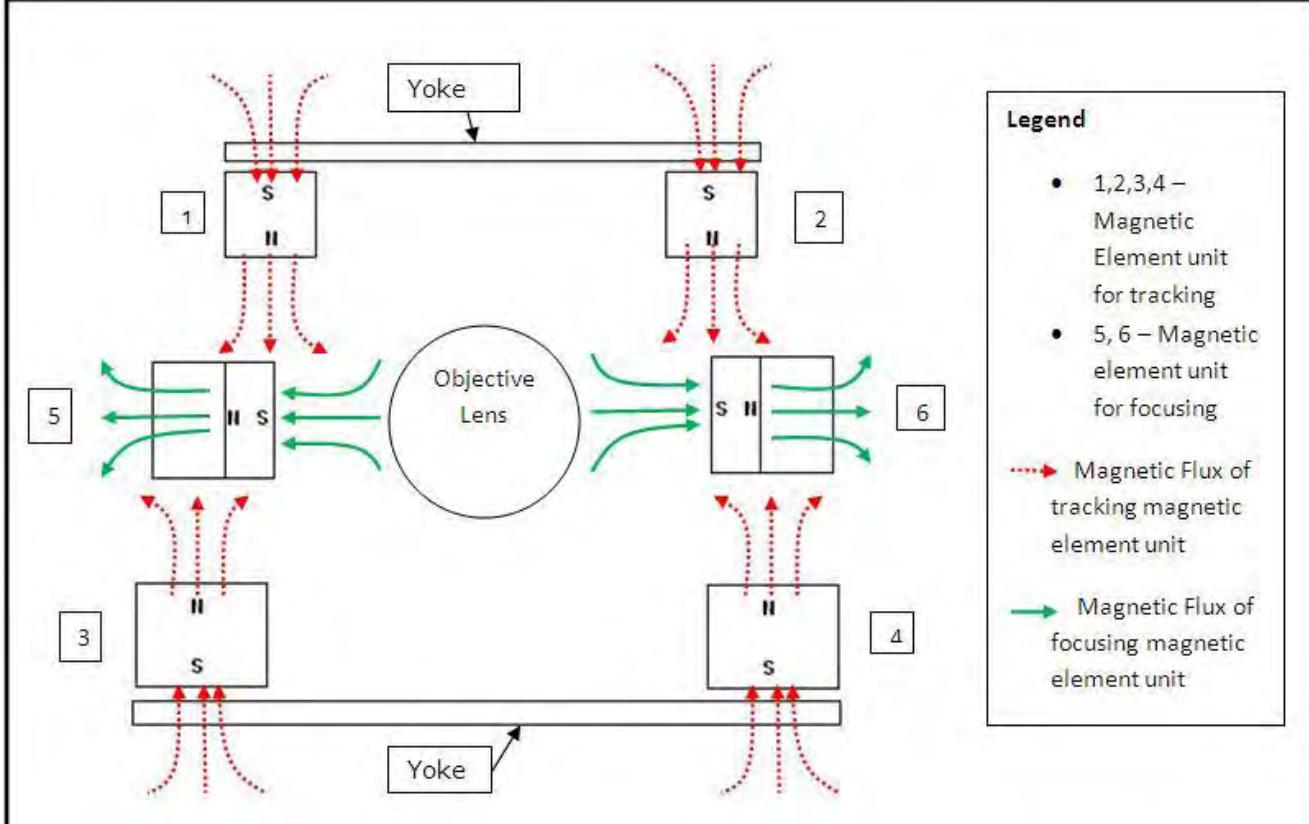
U.S. Patent No. 7,542,384
Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
12k. the second magnetic element unit corresponding to the focusing coils and having a magnetic flux direction perpendicular to the first magnetic element unit, and	 <p data-bbox="1013 1101 1446 1232">SECOND MAGNETIC ELEMENT UNIT FOR FOCUSING COIL</p>

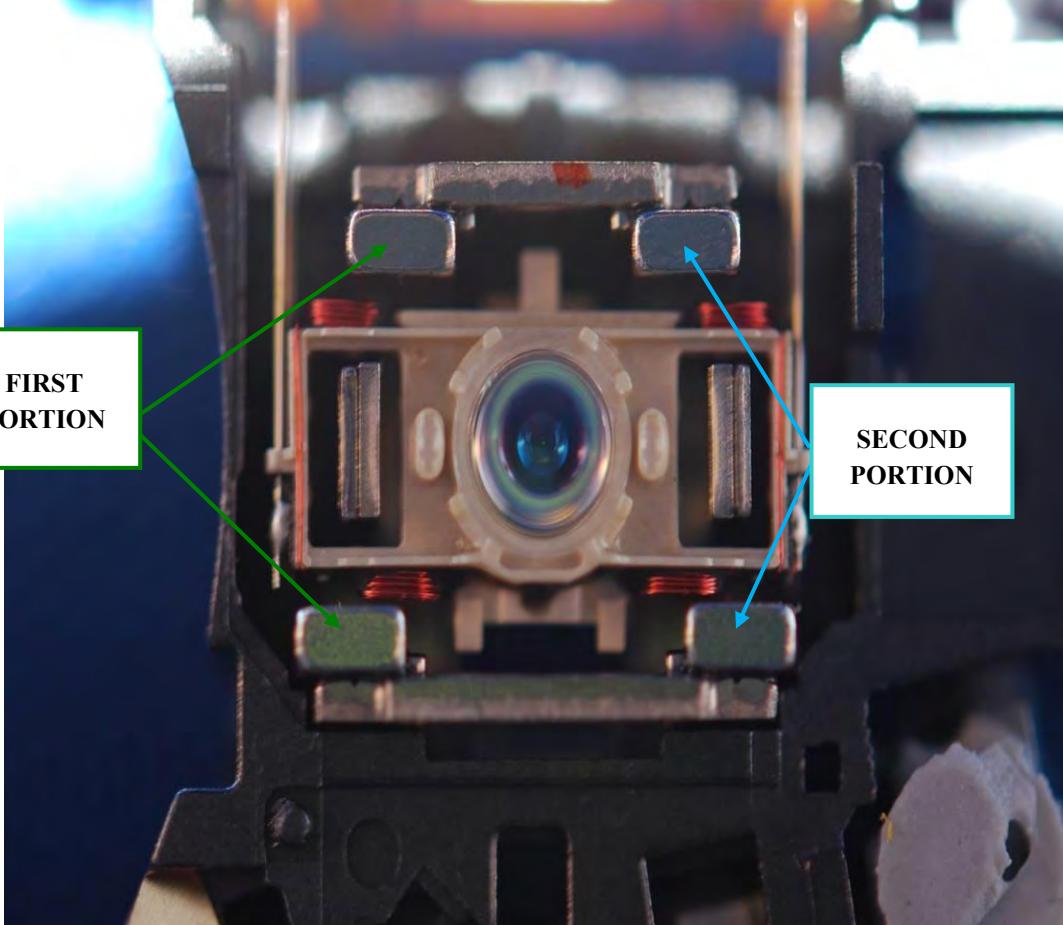
U.S. Patent No. 7,542,384
Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
	 <p data-bbox="692 344 1812 1209">The image shows a close-up of a magnetic assembly, likely a component of a printer or similar device. It features a central cylindrical core with a central hole. Three copper coils are wound around the core: two on the top and bottom sections and one on the side. The top and bottom coils are labeled 'TRACKING COIL' with arrows pointing to them. The side coil is labeled 'FOCUSING COIL' with an arrow pointing to it. A central label 'PERPENDICULAR FLUX DIRECTION' with an arrow points to the central core area, indicating the direction of magnetic flux.</p>

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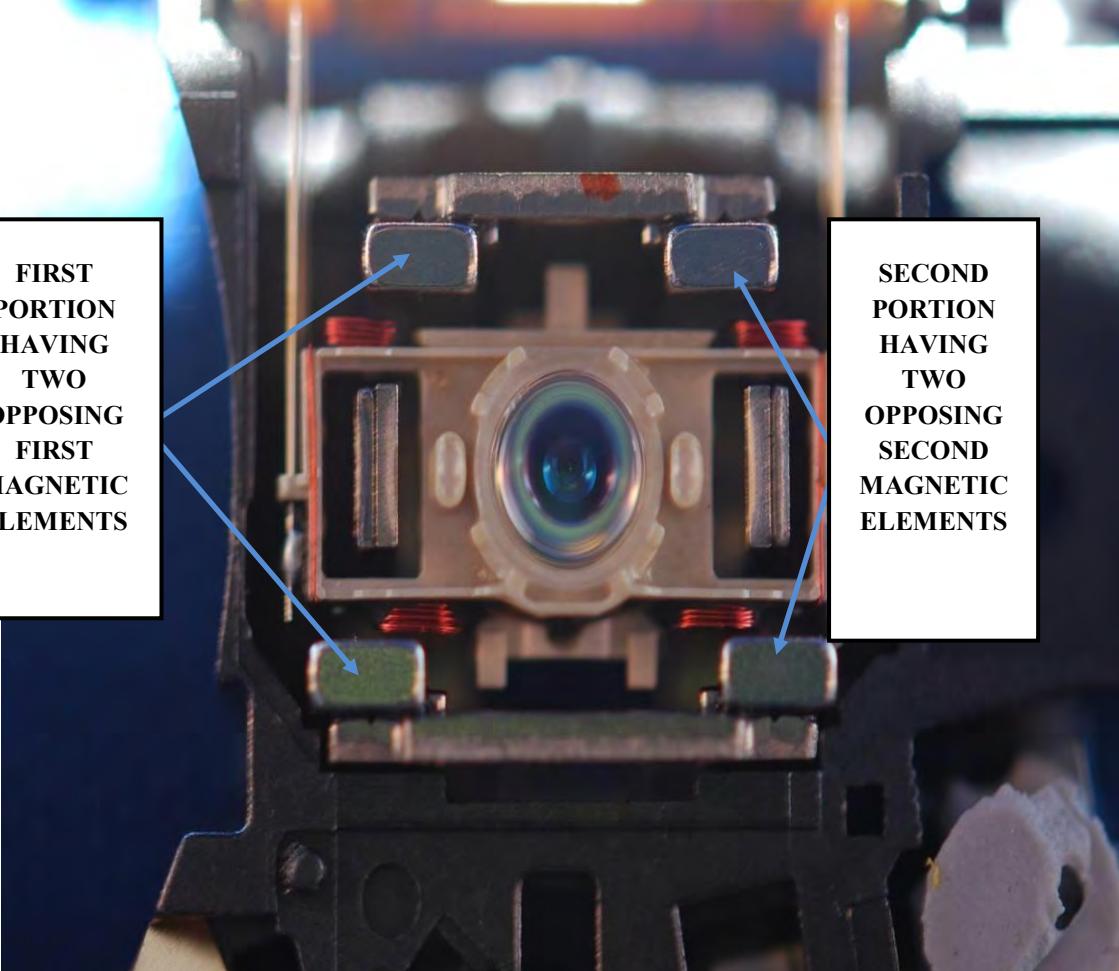
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
	 <div data-bbox="1564 442 1871 1070" style="border: 1px solid black; padding: 10px;"> <p>Legend</p> <ul style="list-style-type: none"> 1,2,3,4 – Magnetic Element unit for tracking 5, 6 – Magnetic element unit for focusing Red dotted line – Magnetic Flux of tracking magnetic element unit Green solid line – Magnetic Flux of focusing magnetic element unit </div> <p data-bbox="561 1209 1949 1331"> <i>Magnetic flux diagram of the magnetic set (top view layout). The red (dotted) and green (solid) flux lines are perpendicular. Hence, the second magnetic element unit corresponding to the focusing coils has a magnetic flux perpendicular to the first magnetic element unit.</i> </p>

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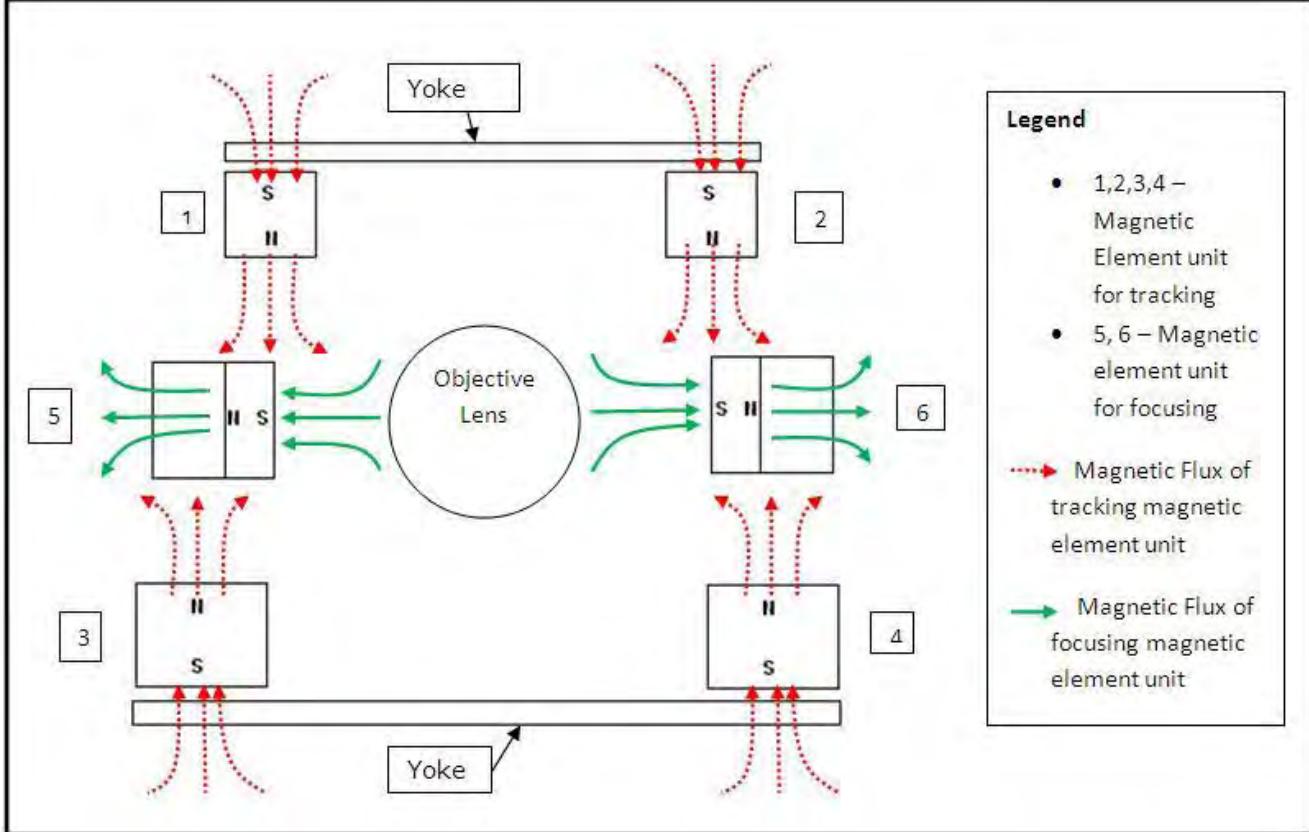
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
12i. wherein the first magnetic element unit includes a <u>first portion</u> and a <u>second portion</u> .	 <p>A close-up photograph of a camera module. The module features a central lens and a white plastic housing. Two green callout boxes are overlaid on the image. The left box, labeled 'FIRST PORTION', points to a rectangular metal component located at the top of the module. The right box, labeled 'SECOND PORTION', points to a similar rectangular metal component located at the bottom of the module. The background is dark and out of focus.</p>

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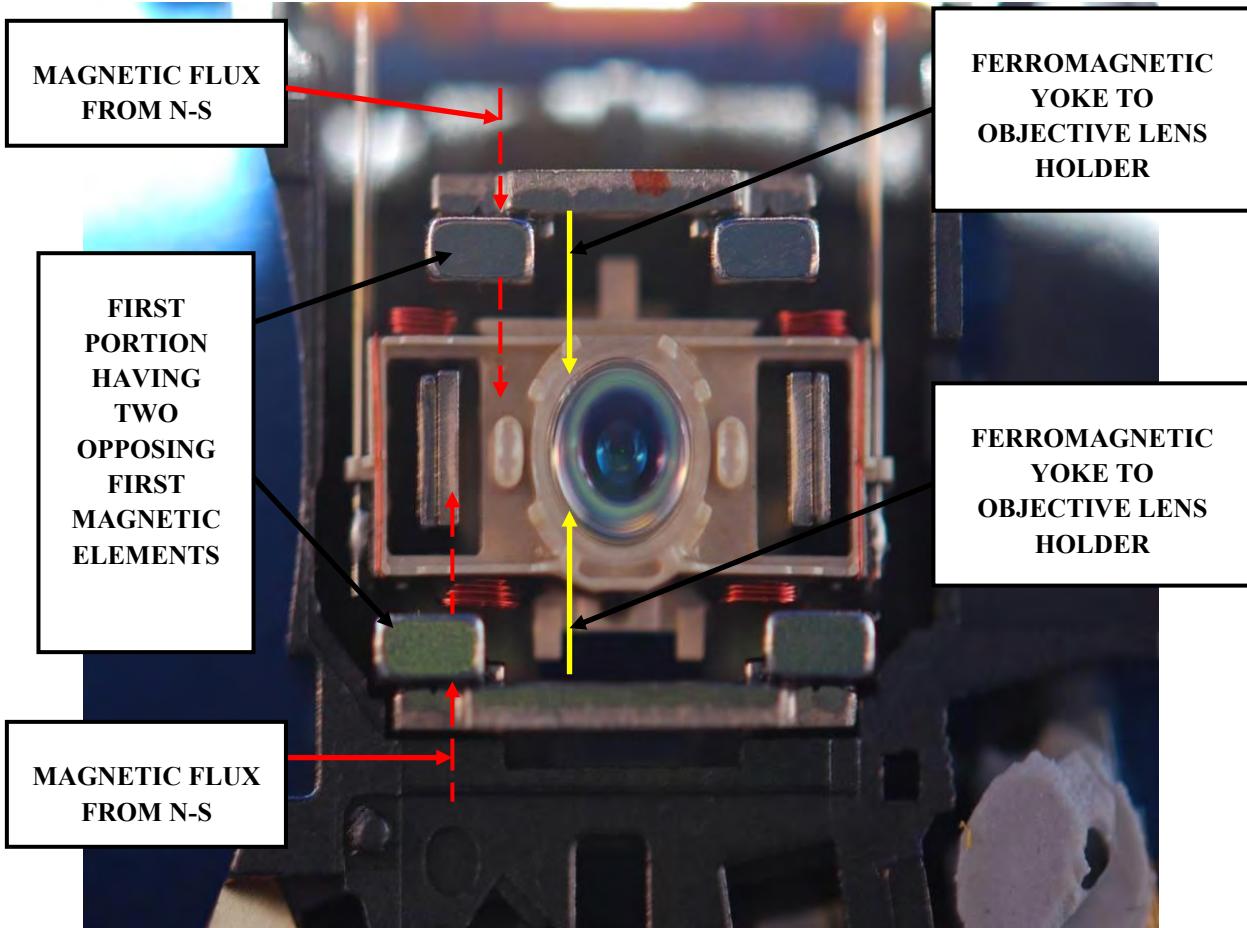
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
12m. the first portion having two opposing first magnetic elements, the second portion having two opposing second magnetic elements,	 <p data-bbox="665 595 813 873">FIRST PORTION HAVING TWO OPPOSING FIRST MAGNETIC ELEMENTS</p> <p data-bbox="1531 595 1700 873">SECOND PORTION HAVING TWO OPPOSING SECOND MAGNETIC ELEMENTS</p>

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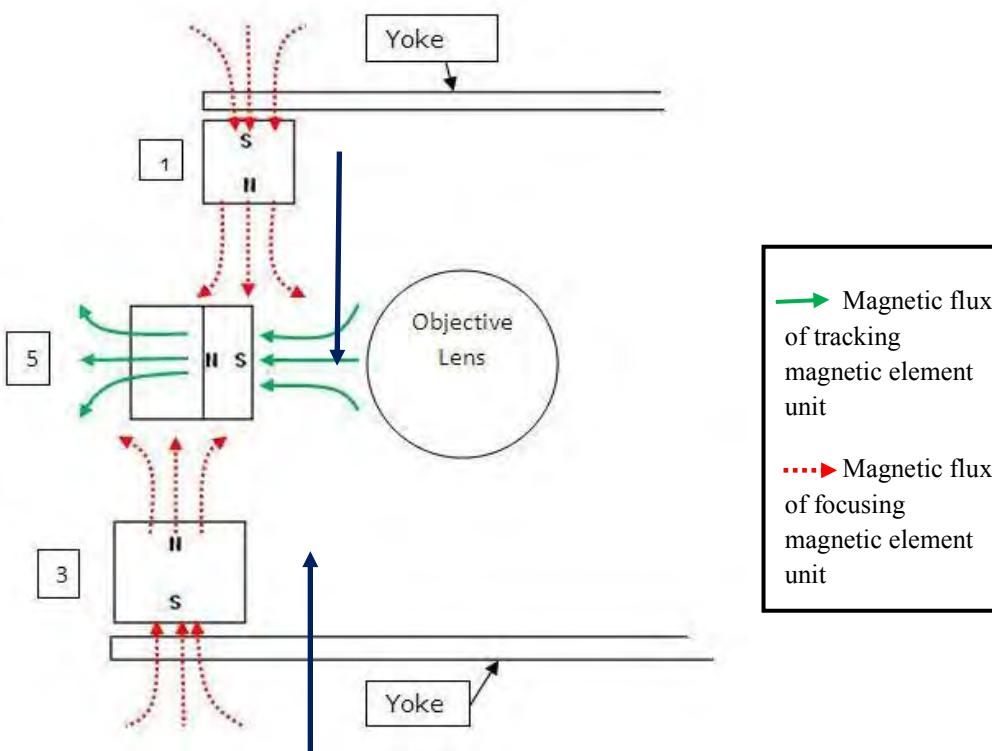
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
	 <p>Legend</p> <ul style="list-style-type: none"> 1,2,3,4 – Magnetic Element unit for tracking 5, 6 – Magnetic element unit for focusing → Magnetic Flux of tracking magnetic element unit → Magnetic Flux of focusing magnetic element unit <p>1,3 correspond to the first portion having two opposing first magnetic elements. 2,4 correspond to the second portion having two opposing second magnetic elements.</p>

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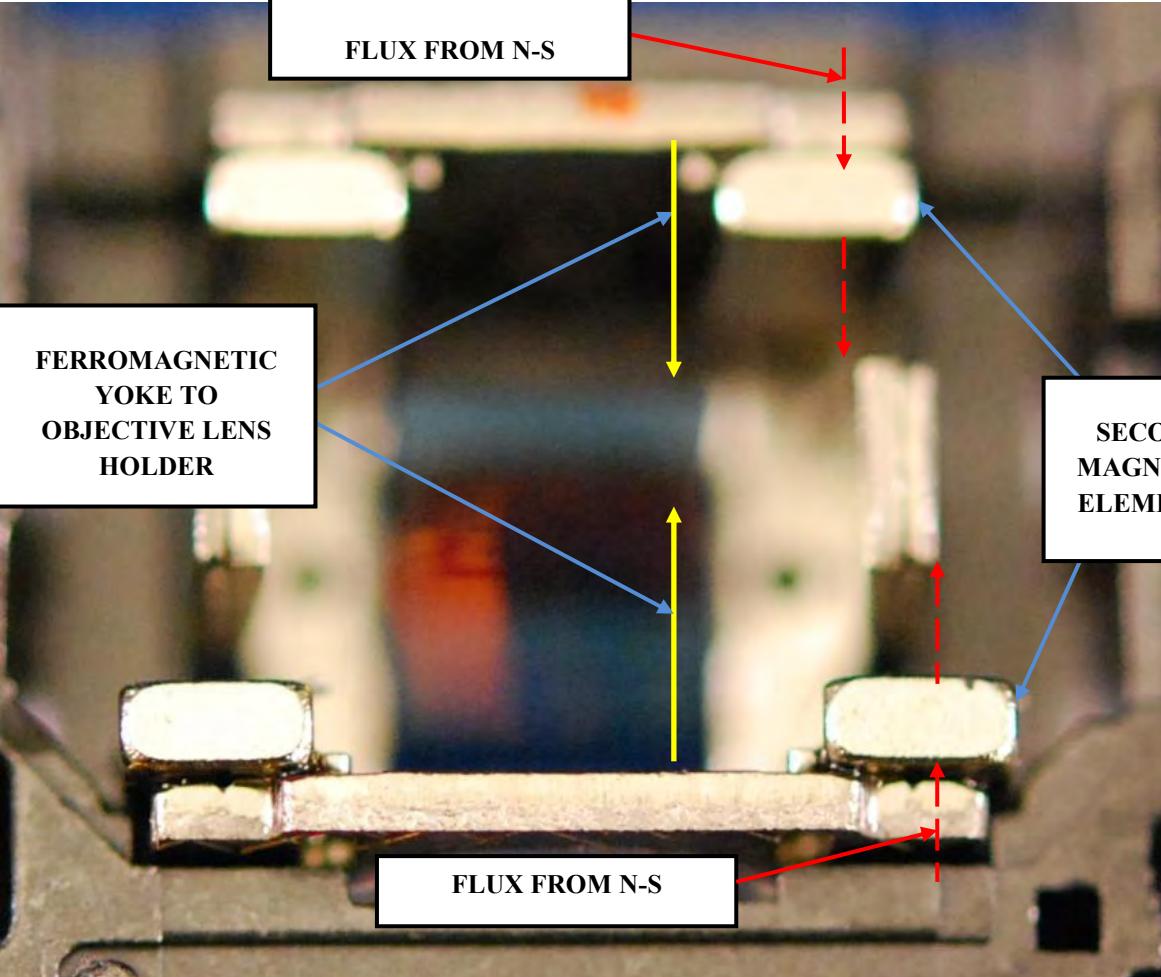
Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
<p>12n. the magnetic flux direction of the first magnetic elements from the N pole to the S pole being coincided with the direction from the ferromagnetic yoke to the objective lens holder,</p>	 <p>The image shows a close-up of a camera lens assembly. Several callout boxes point to specific parts of the assembly:</p> <ul style="list-style-type: none"> MAGNETIC FLUX FROM N-S: Points to the top left of the lens, indicating the direction of magnetic flux from the North pole to the South pole. FERROMAGNETIC YOKE TO OBJECTIVE LENS HOLDER: Points to the top right, indicating the ferromagnetic yoke that holds the objective lens. FIRST PORTION HAVING TWO OPPOSING FIRST MAGNETIC ELEMENTS: Points to the center-left, identifying the magnetic elements within the lens housing. MAGNETIC FLUX FROM N-S: Points to the bottom left, indicating the direction of magnetic flux from the North pole to the South pole.

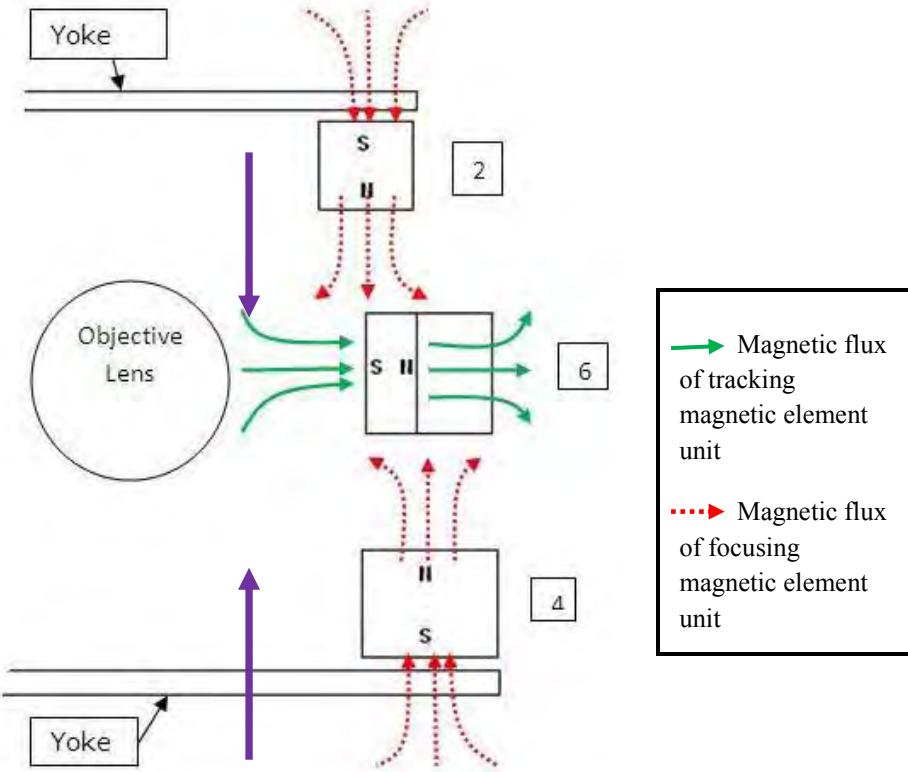
U.S. Patent No. 7,542,384
Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
	 <p data-bbox="551 1134 1949 1175">Blue lines (bold lines) represent direction from the ferromagnetic yoke to the objective lens holder.</p> <p data-bbox="551 1183 1949 1256">The red flux lines (dotted) corresponding to the magnetic flux direction of the first magnetic elements is coinciding with the blue lines (bold lines).</p> <p data-bbox="551 1264 1949 1305">1, 3 are the first magnetic elements</p>

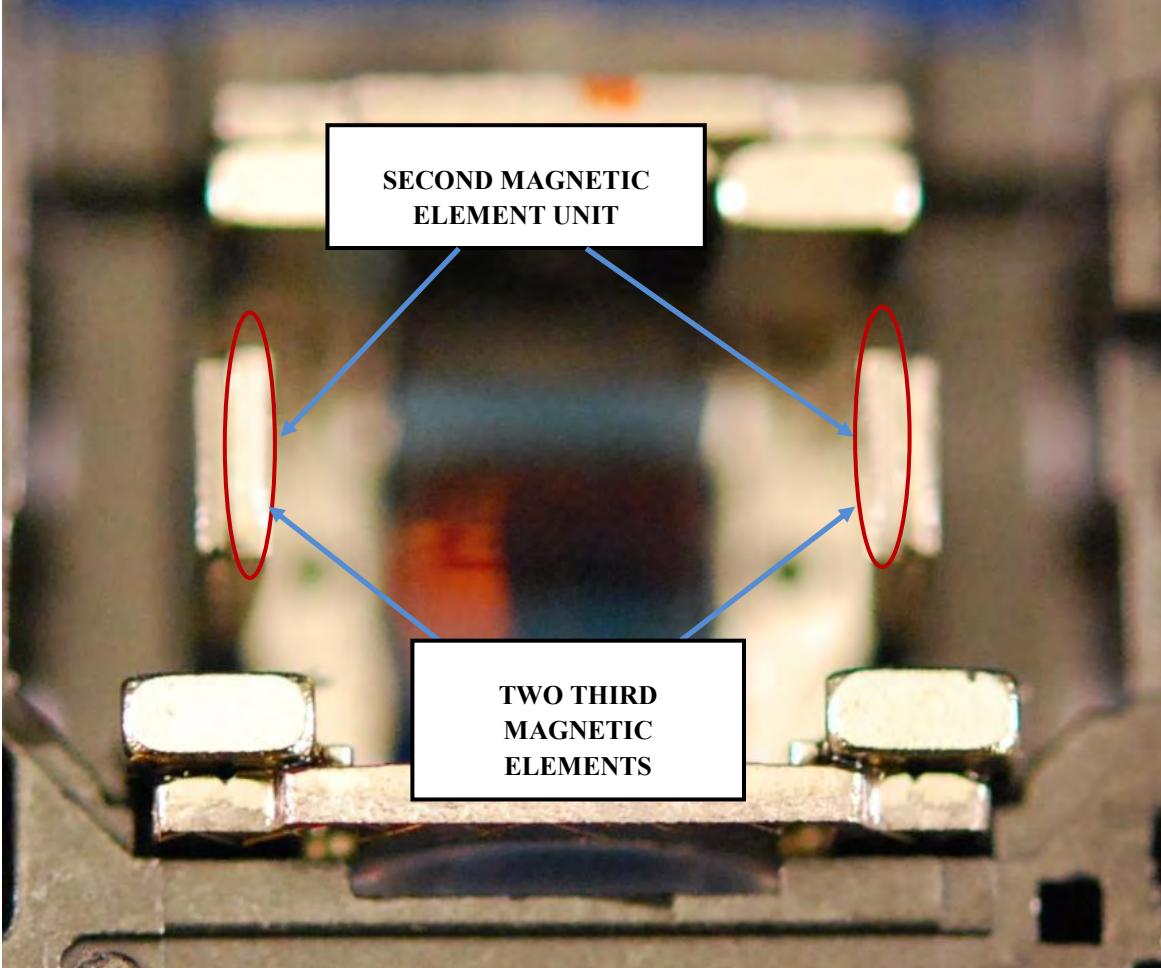
U.S. Patent No. 7,542,384
Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
12o. the magnetic flux direction of the second magnetic elements from the N pole to the S pole being coincided with the direction from the ferromagnetic yoke to the objective lens holder,	 <p data-bbox="644 336 1805 1313">The photograph shows a close-up of a magnetic assembly. A yellow vertical line is drawn through the center, representing the flux path from the ferromagnetic yoke to the objective lens holder. Red dashed arrows indicate the flux direction from the N-S poles of the second magnetic elements. Blue arrows point from labels to specific components: 'FERROMAGNETIC YOKE TO OBJECTIVE LENS HOLDER' to the yoke, 'SECOND MAGNETIC ELEMENTS' to the small rectangular blocks, and 'FLUX FROM N-S' to the red dashed arrows.</p>

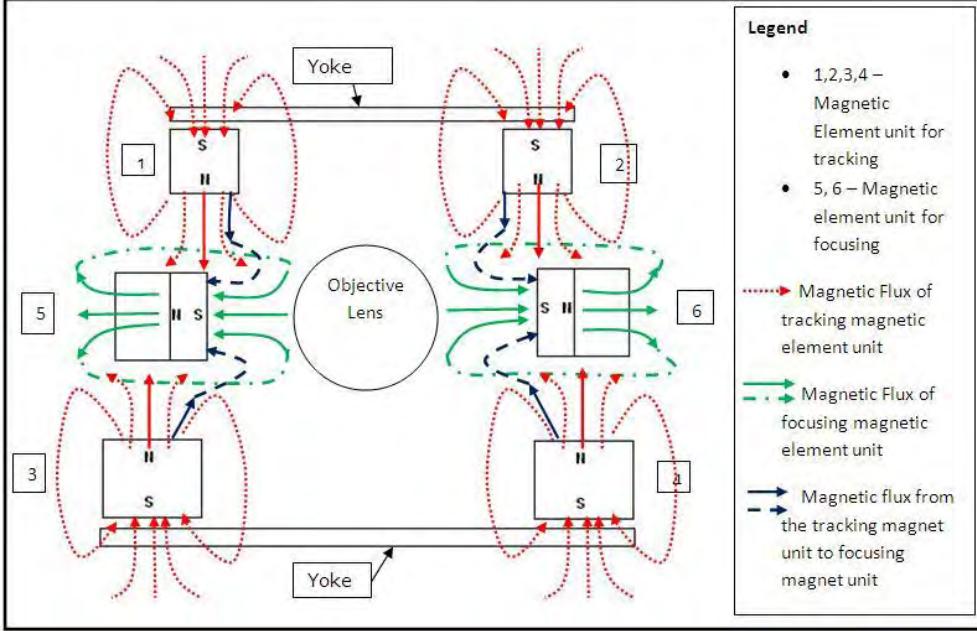
U.S. Patent No. 7,542,384
Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
	 <p>Purple lines (bold lines) represent direction from the ferromagnetic yoke to the objective lens holder. The red flux lines (dotted lines) corresponding to the magnetic flux direction of the second magnetic elements is coinciding with the purple lines. 2, 4 are the second magnetic elements</p>

U.S. Patent No. 7,542,384
Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
12p. the second magnetic element unit including two third magnetic elements that have a magnetic flux direction from the ferromagnetic yoke to the objective lens holder,	 <p>A close-up photograph of a mechanical assembly, likely a magnetic element unit. The assembly consists of a central dark cylindrical component with two white, rectangular magnetic elements attached to its sides. Two blue arrows point from a callout box labeled "SECOND MAGNETIC ELEMENT UNIT" to the top two white elements. Another blue arrow points from a callout box labeled "TWO THIRD MAGNETIC ELEMENTS" to the bottom two white elements. Red circles highlight these four white elements. The assembly is mounted on a dark, metallic base.</p>

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CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (GP08LU30, GP08LU11, GP10NB20, GT30L, GP40LB10, AND GP30NB20)
	 <div data-bbox="1501 349 1733 980"> <p>Legend</p> <ul style="list-style-type: none"> 1,2,3,4 – Magnetic Element unit for tracking 5, 6 – Magnetic element unit for focusing Magnetic Flux of tracking magnetic element unit — Magnetic Flux of focusing magnetic element unit —> Magnetic flux from the tracking magnet unit to focusing magnet unit </div> <p>Explanation #1:</p> <p>The dark blue lines (dashed lines) and red (solid lines) are flux lines originating from N pole of tracking magnets and ending on S pole of focusing magnets. The direction of these lines is from ferromagnetic yoke to the objective lens.</p> <p>Explanation #2:</p> <p>The green lines (dashed and dotted lines) are flux lines of focusing magnets. They form closed loops from the N pole to S pole of these magnets. This direction (N->S pole) is from the ferromagnetic yoke 5 and 6 to the objective lens unit.</p>

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CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
18. An <u>objective lens actuator</u> , comprising: ³	<p>Each element of this claim, except where noted otherwise, and each element of the asserted claims dependent thereon, is present literally and/or under the doctrine of equivalents in the accused LG Products.⁴</p> <p>ITRI provides these infringement contentions before obtaining discovery and disclosures from LG. ITRI expects that LG and/or third parties will produce information regarding LG's instrumentalities beyond that which is publically available. Accordingly, ITRI reserves the right to modify these infringement contentions based upon LG's document production.</p>

³ ITRI contends that the preamble to this claim is not limiting in any manner. ITRI's references to the accused product regarding the preamble are for illustration only and do not constitute an admission that the preamble is limiting.

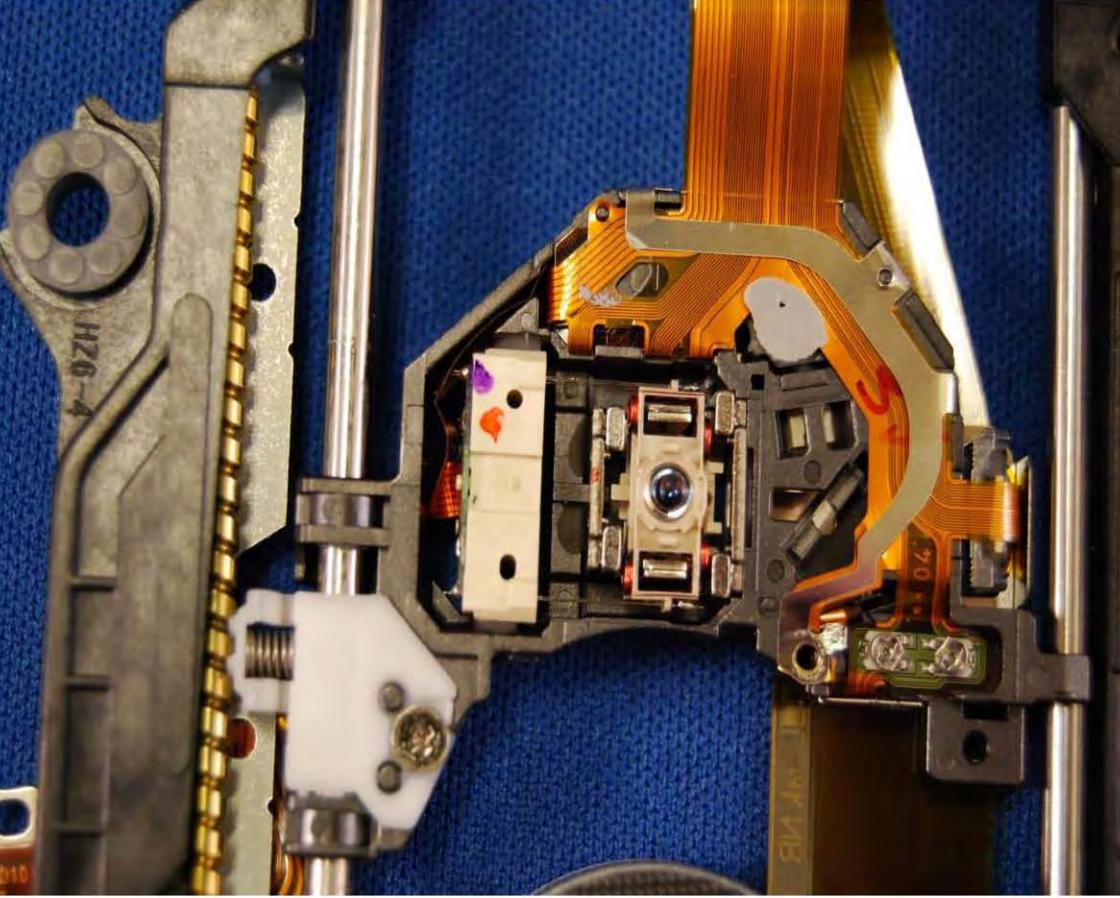
⁴ The LG Products often practice the claim elements in numerous alternative ways in accordance with the present chart. The LG Products should be assumed to act alone or in combination as referenced herein and interpreted in the singular or plural accordingly. LG further provides the LG Products as well as the instructions to customers/users causing them to use the accused products in an infringing manner, including, without limitation, in their default and expected uses.

To the extent each element of this claim, and the asserted claims dependent thereon are not present literally in the accused LG Products, each element is present under the doctrine of equivalents because there is no substantial difference between the elements of the asserted claims and the corresponding functionality in the accused instrumentality, *i.e.*, the corresponding functionality in the accused product performs substantially the same function, in substantially the same way to achieve substantially the same results as the claimed elements.

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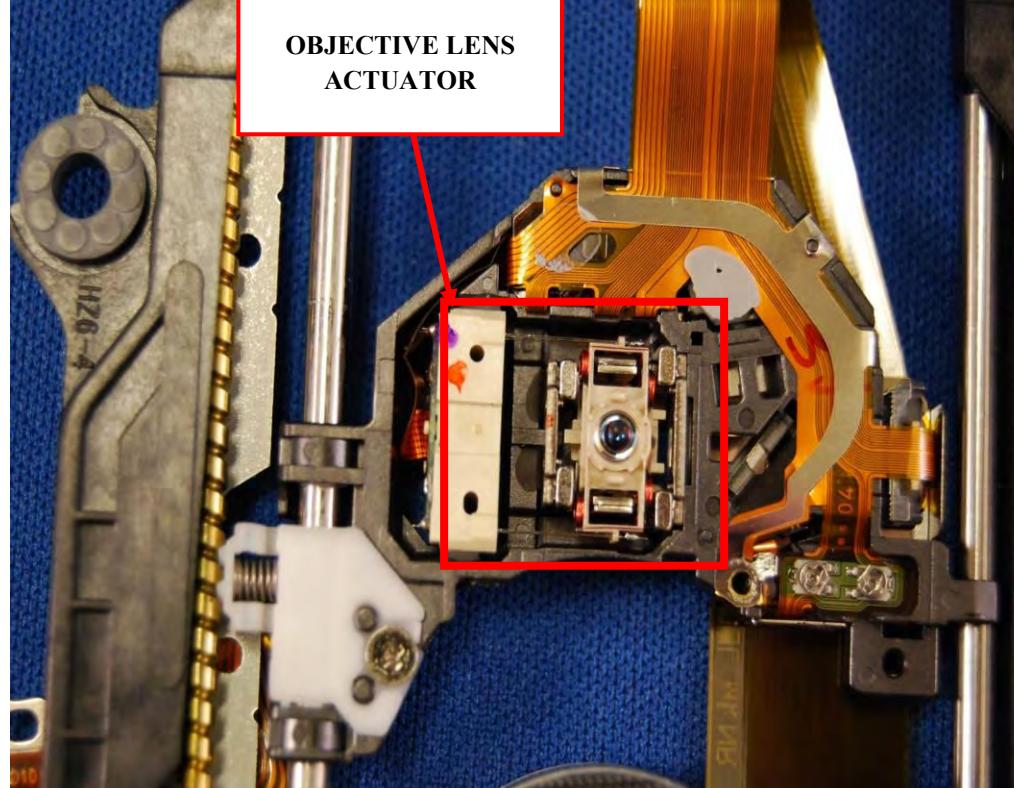
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
	

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Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
	

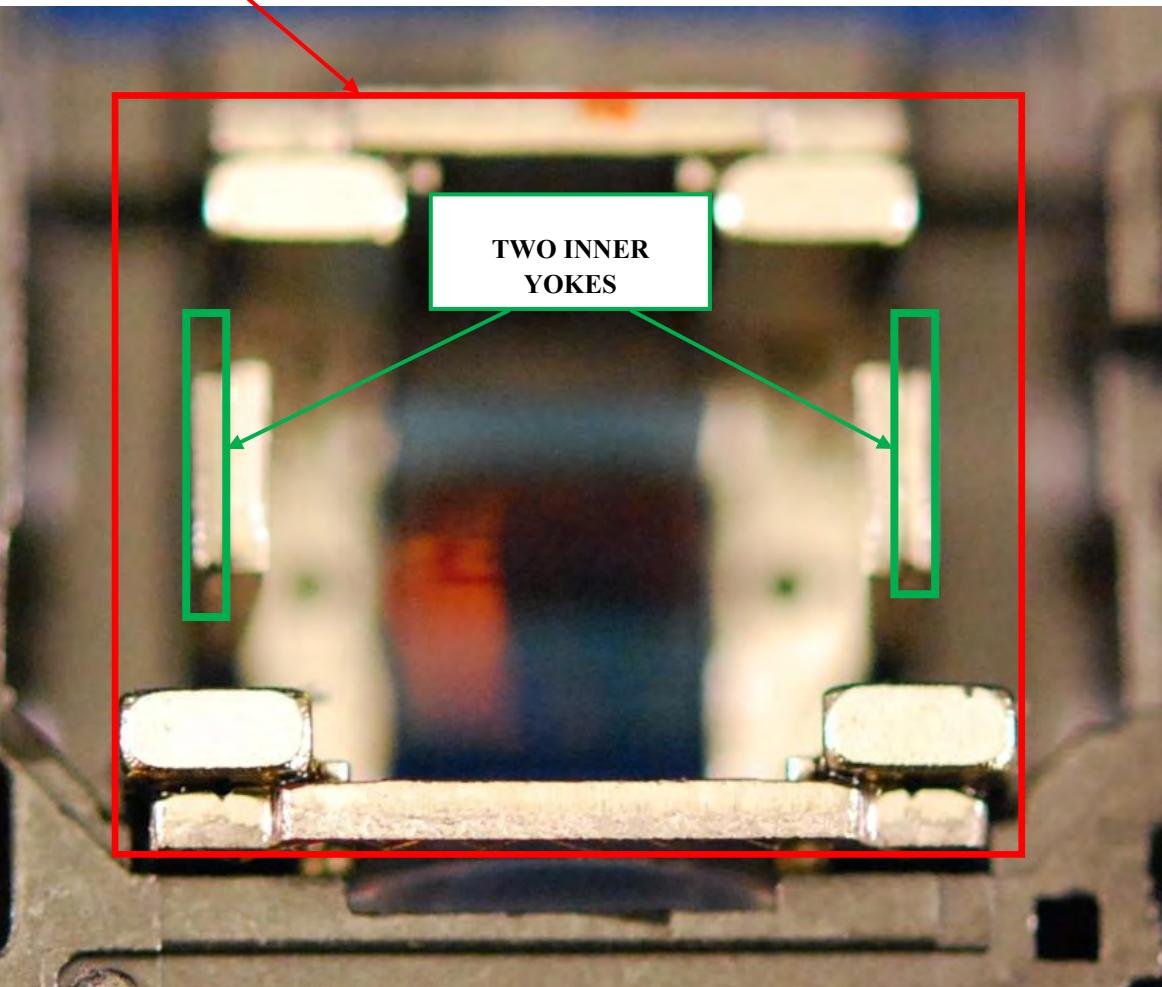
U.S. Patent No. 7,542,384

Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
	 <p data-bbox="1009 323 1248 381">OBJECTIVE LENS ACTUATOR</p>

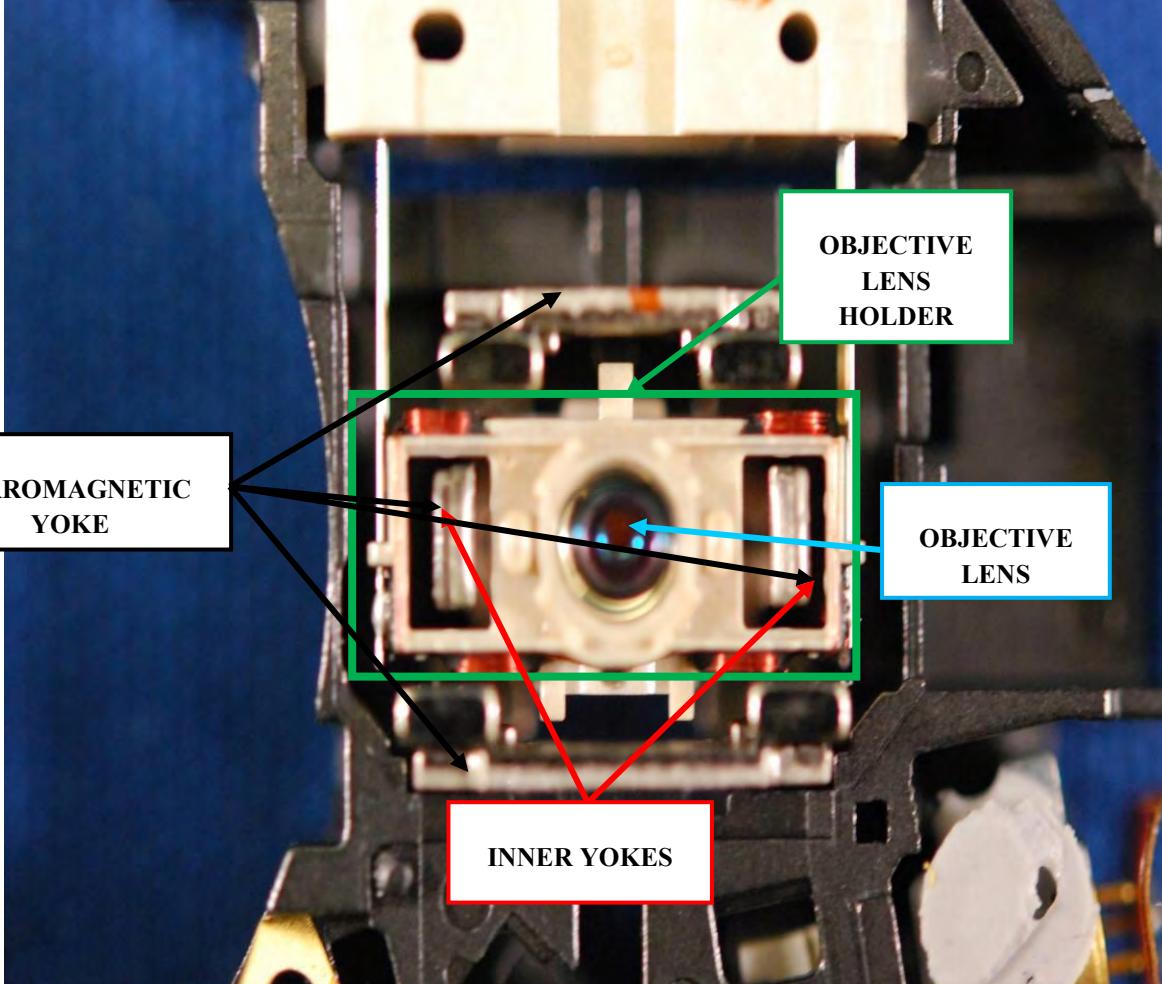
U.S. Patent No. 7,542,384

Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
18a. a <u>ferromagnetic yoke</u> including <u>two inner yokes</u> ;	<p data-bbox="629 323 967 347">FERROMAGNETIC YOKE</p>  <p data-bbox="1178 605 1347 662">TWO INNER YOKES</p>

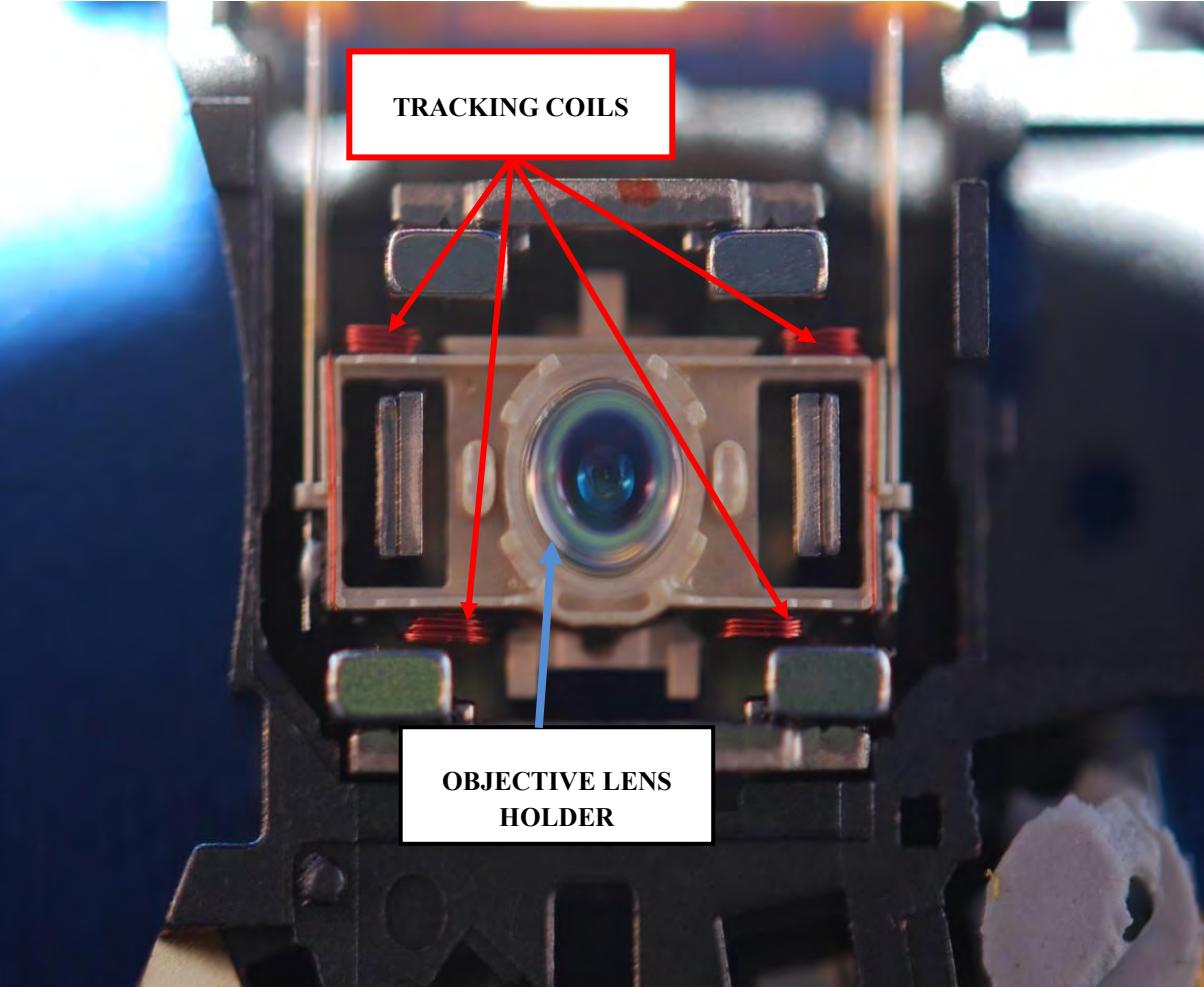
U.S. Patent No. 7,542,384

Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
18b. an <u>objective lens holder</u> movably located on the ferromagnetic yoke corresponding to the <u>inner yokes</u> for holding an objective lens;	 <p data-bbox="677 339 1839 1323">The image shows a close-up of a mechanical assembly. A central component is a rectangular metal plate with a circular opening in the center, labeled 'OBJECTIVE LENS' with a blue box and an arrow. This plate is held in place by four red screws. Above this plate, another rectangular metal plate is labeled 'OBJECTIVE LENS HOLDER' with a green box and an arrow. Below the central plate, there are two U-shaped metal structures labeled 'INNER YOKES' with a red box and an arrow. A larger metal plate labeled 'FERROMAGNETIC YOKE' with a black box and an arrow is positioned above the central assembly. The entire assembly is mounted on a dark blue plastic frame.</p>

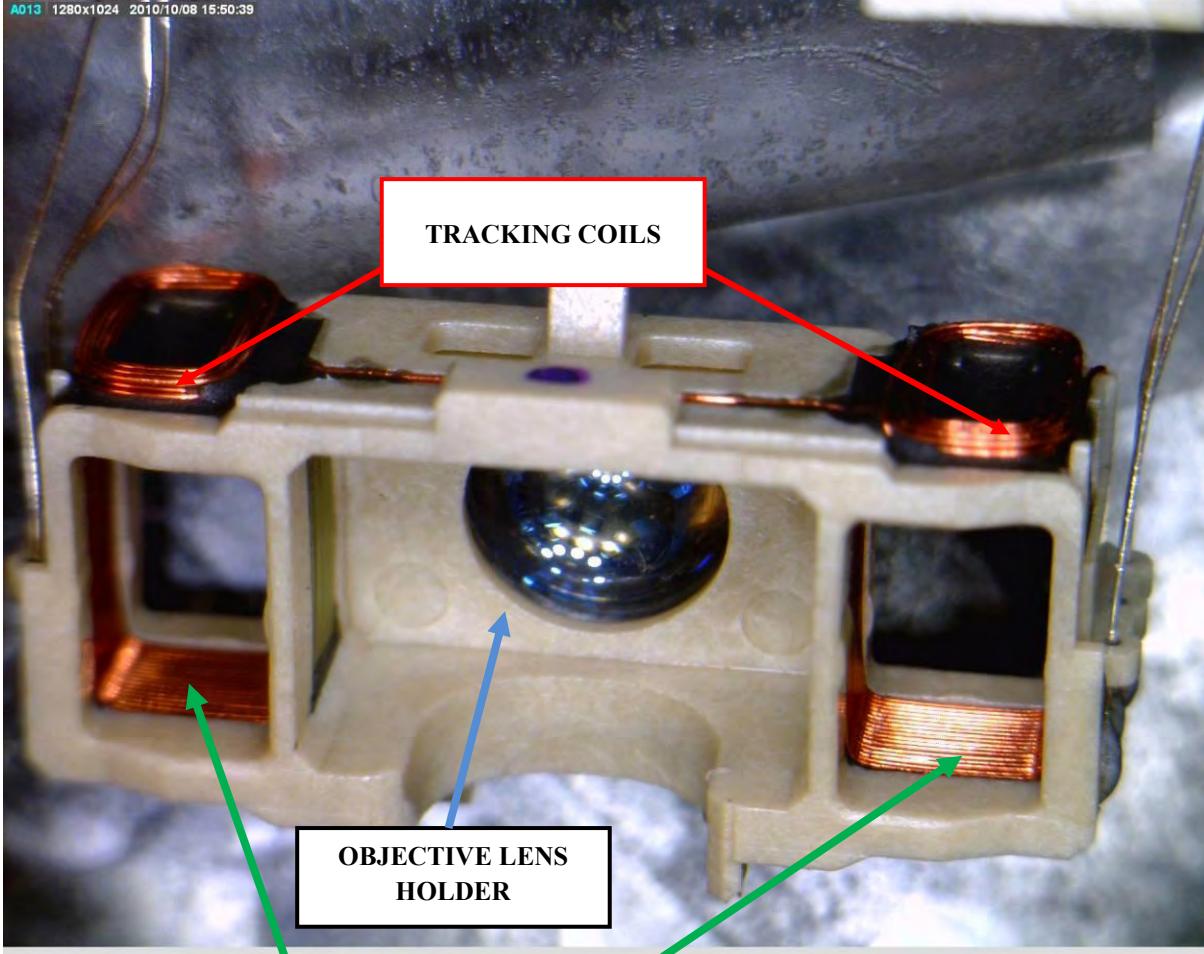
U.S. Patent No. 7,542,384

Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
18c. <u>two tracking coils</u> and <u>two focusing coils</u> which are respectively located on two opposite sides of the objective lens holder	 <p data-bbox="650 331 1854 1318">A close-up photograph of an objective lens holder. The lens is centered, surrounded by a metal frame. Red arrows point to two rectangular copper coils located on the top and bottom sides of the frame, labeled 'TRACKING COILS'. A blue arrow points to the central objective lens, labeled 'OBJECTIVE LENS HOLDER'.</p>

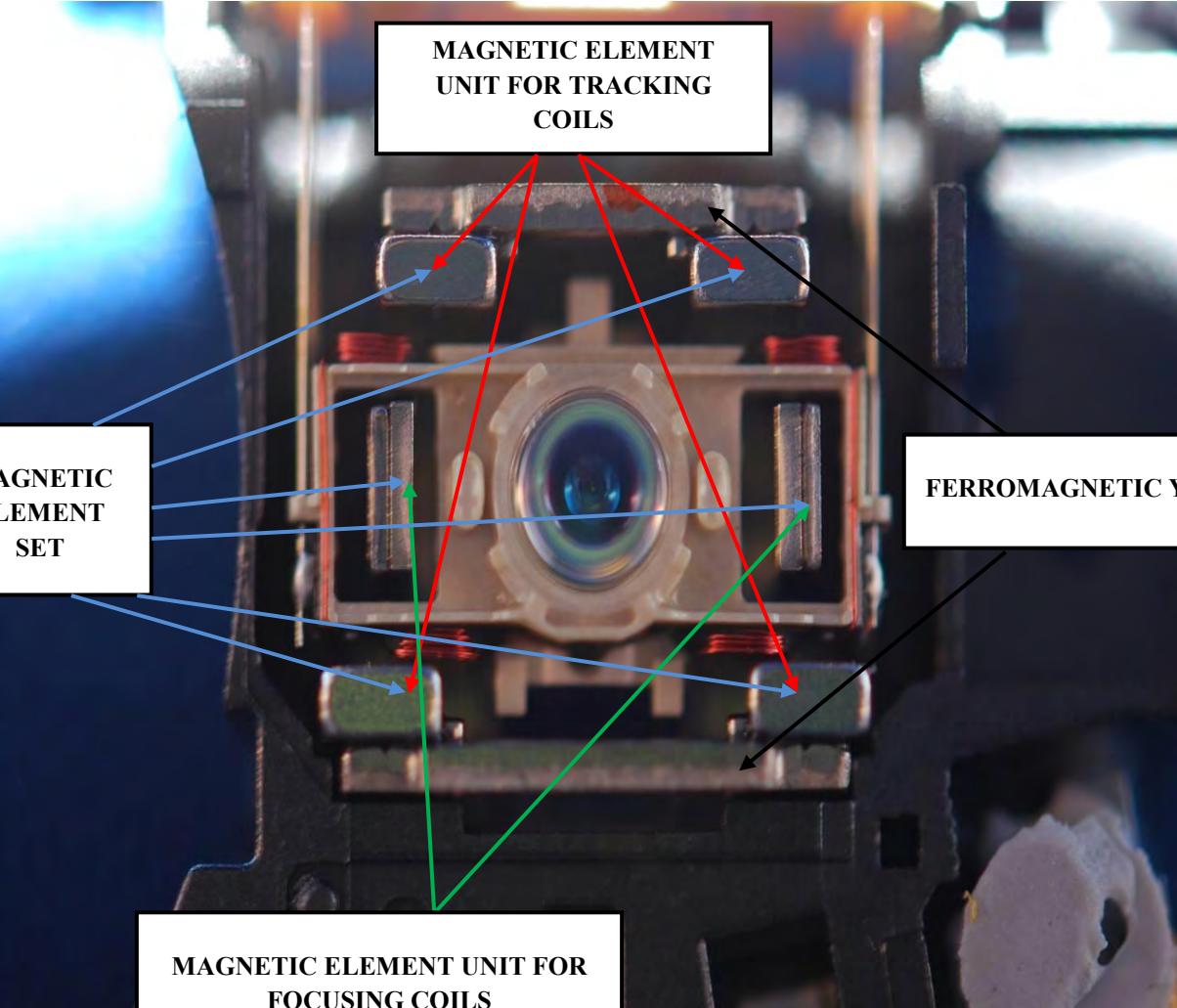
U.S. Patent No. 7,542,384

Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
18d. and located on the other two opposite sides of the objective lens holder and surrounded with the two inner yokes;	 <p data-bbox="1072 502 1311 527">TRACKING COILS</p> <p data-bbox="979 1127 1218 1188">OBJECTIVE LENS HOLDER</p> <p data-bbox="937 1290 1260 1315">TWO FOCUSING COILS</p>

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Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
18e. a magnetic element set located on the ferromagnetic yoke corresponding to the tracking coils and the focusing coils to generate a magnetic field perpendicular to the optical axis of the objective lens;	

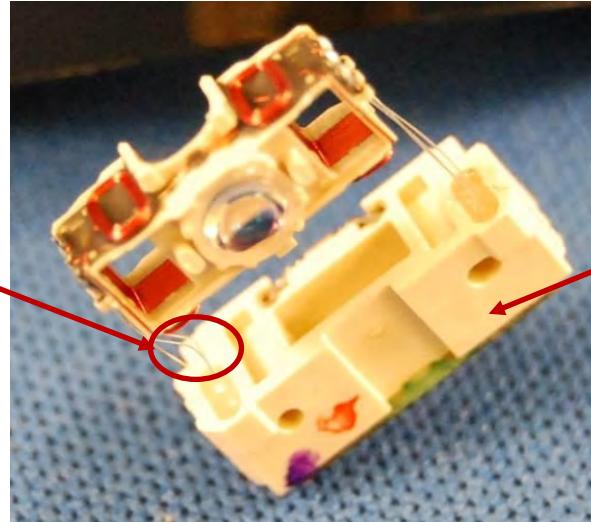
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CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
18f. <u>a suspension wire set</u> connecting to the objective lens holder, the tracking coils, and the focusing coils to hang the objective lens holder and channel current to the tracking coils and the focusing coils;	

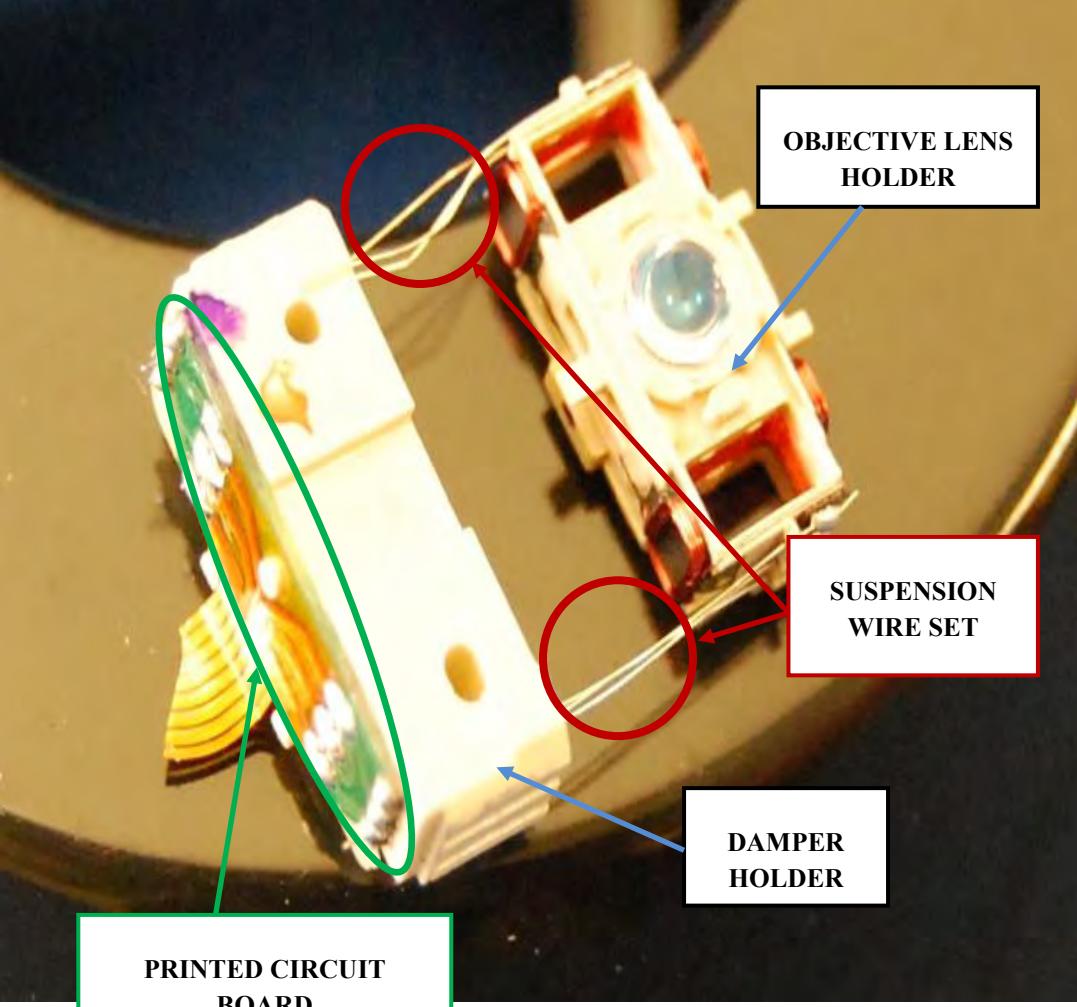
U.S. Patent No. 7,542,384

Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
18g. <u>a damper holder</u> located on the ferromagnetic yoke to allow the <u>suspension wire set</u> to pass through; and	 <p data-bbox="665 465 918 595">SUSPENSION WIRE SET</p> <p data-bbox="1636 432 1826 563">DAMPER HOLDER</p> A photograph of a small, rectangular electronic component, likely a speaker or microphone assembly. The component is gold-colored with several red and black wires. A red callout box labeled 'SUSPENSION WIRE SET' points to a thin wire passing through a hole in the center. Another red callout box labeled 'DAMPER HOLDER' points to a rectangular metal clip on the right side of the component.

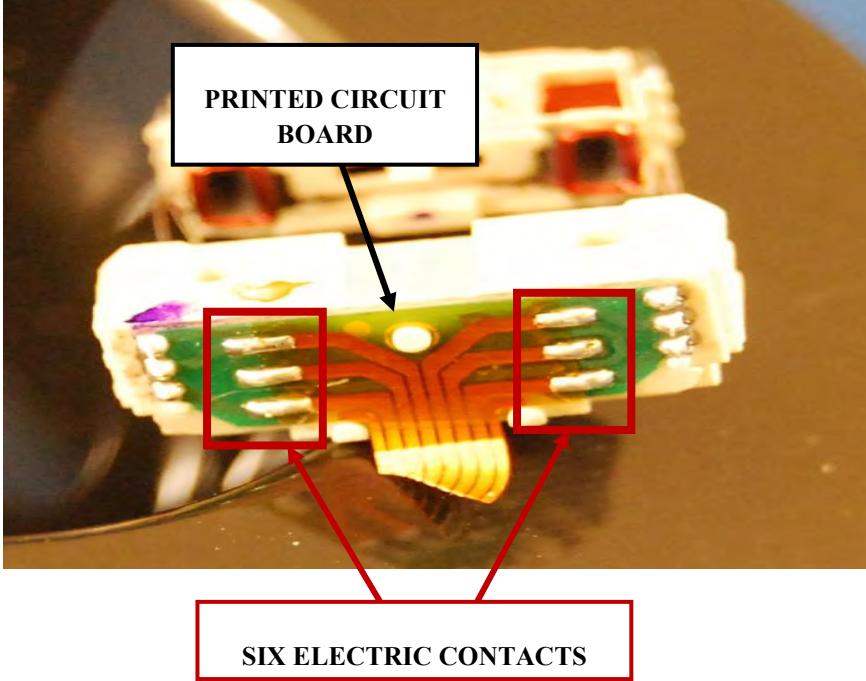
U.S. Patent No. 7,542,384

Exhibit B1

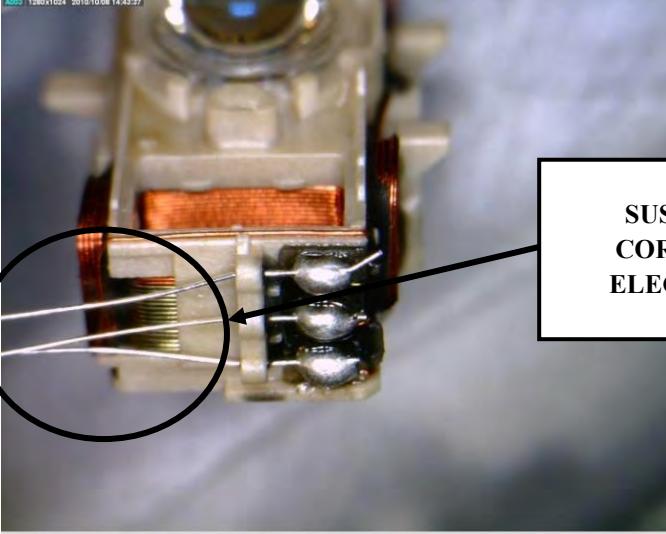
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
<p>18h. <u>a printed circuit board</u> located on the damper holder and surrounded with the <u>suspension wire set</u> to provide the current to the tracking coils and the focusing coils to drive the objective lens holder,</p>	 <p>The image shows a close-up of a camera lens assembly. A white printed circuit board (PCB) is mounted on a silver-colored damper holder. A green oval highlights the PCB. A red circle highlights the suspension wire set, which is a thin wire attached to the PCB. A blue arrow points from the label 'OBJECTIVE LENS HOLDER' to the lens itself. Another blue arrow points from the label 'DAMPER HOLDER' to the silver holder. A blue arrow points from the label 'SUSPENSION WIRE SET' to the red circle.</p> <p>OBJECTIVE LENS HOLDER</p> <p>SUSPENSION WIRE SET</p> <p>DAMPER HOLDER</p> <p>PRINTED CIRCUIT BOARD</p>

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Exhibit B1

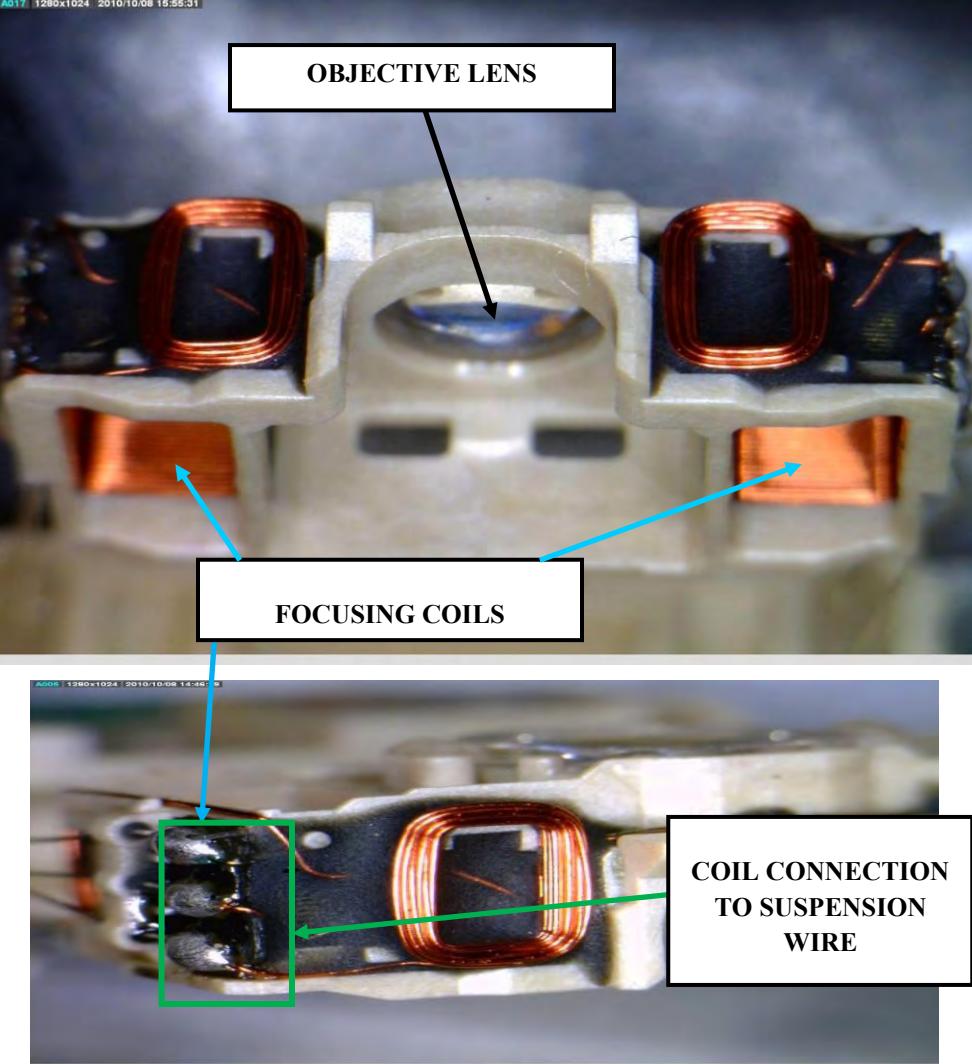
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
18i. wherein the <u>printed</u> <u>circuit board</u> has <u>six</u> <u>electric</u> <u>contacts</u> , the <u>suspension</u> <u>wire</u> set having <u>six</u> <u>suspension wires</u> corresponding to the six electric contacts,	

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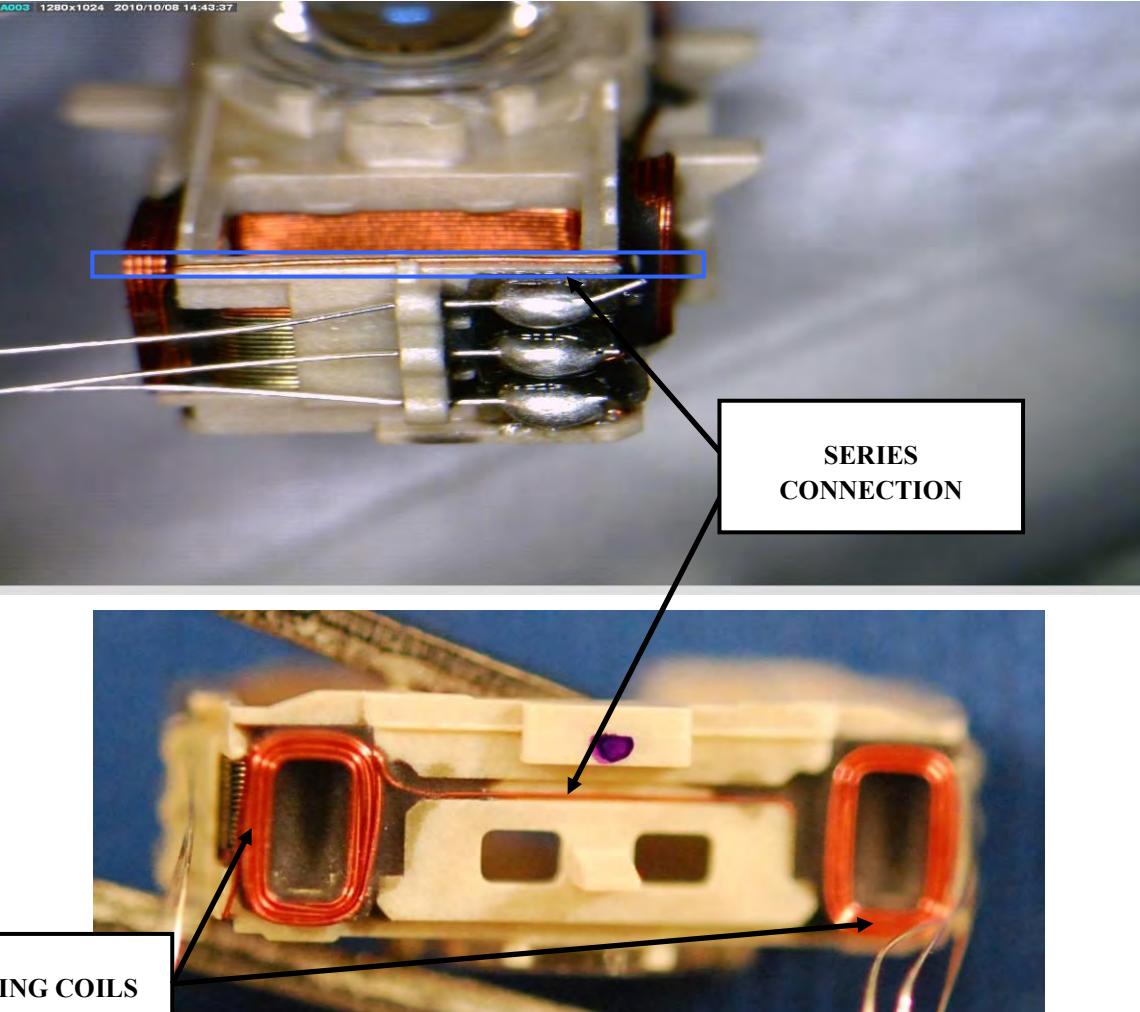
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
	 <p data-bbox="1510 486 1826 584">SUSPENSION WIRES CORRESPONDING TO ELECTRIC CONTACTS</p>

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Exhibit B1

CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
<p>18j. <u>the two focusing coils</u> placed in the two sides of the objective lens holder respectively and independent of each other, <u>each of the focusing coils</u> has two focusing wire contacts connecting to one of the suspension wires,</p>	 <p data-bbox="1087 350 1320 375">OBJECTIVE LENS</p> <p data-bbox="1045 889 1277 913">FOCUSING COILS</p> <p data-bbox="1446 1142 1721 1248">COIL CONNECTION TO SUSPENSION WIRE</p>

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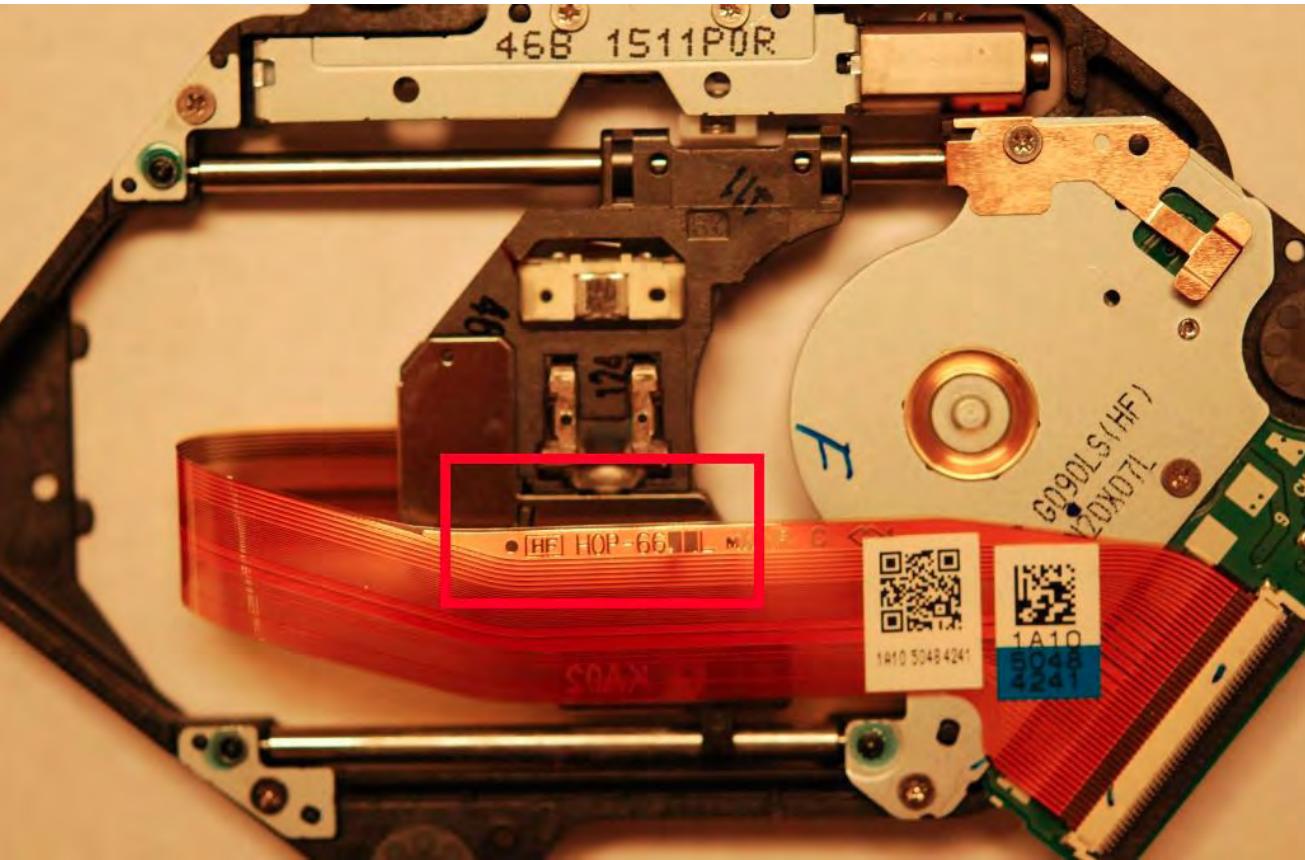
CLAIM ELEMENT OF USP 7,542,384	EVIDENCE FROM PRODUCT (LG GP08LU30)
<p>18k. and <u>the tracking coils</u> are <u>series connection</u> and connect to the other two electric contacts corresponding to the other two suspension wires.</p>	 <p>The image consists of two photographs. The top photograph shows a close-up of a mechanical assembly with several wires and a blue rectangular callout box highlighting a section of the wiring. A black arrow points from this callout box to a white rectangular label with the text "SERIES CONNECTION". The bottom photograph shows a different view of the same assembly, focusing on two red rectangular components labeled "TRACKING COILS" in a white callout box. A black arrow points from this callout box to one of the red coils. The background of the entire table is light gray.</p>

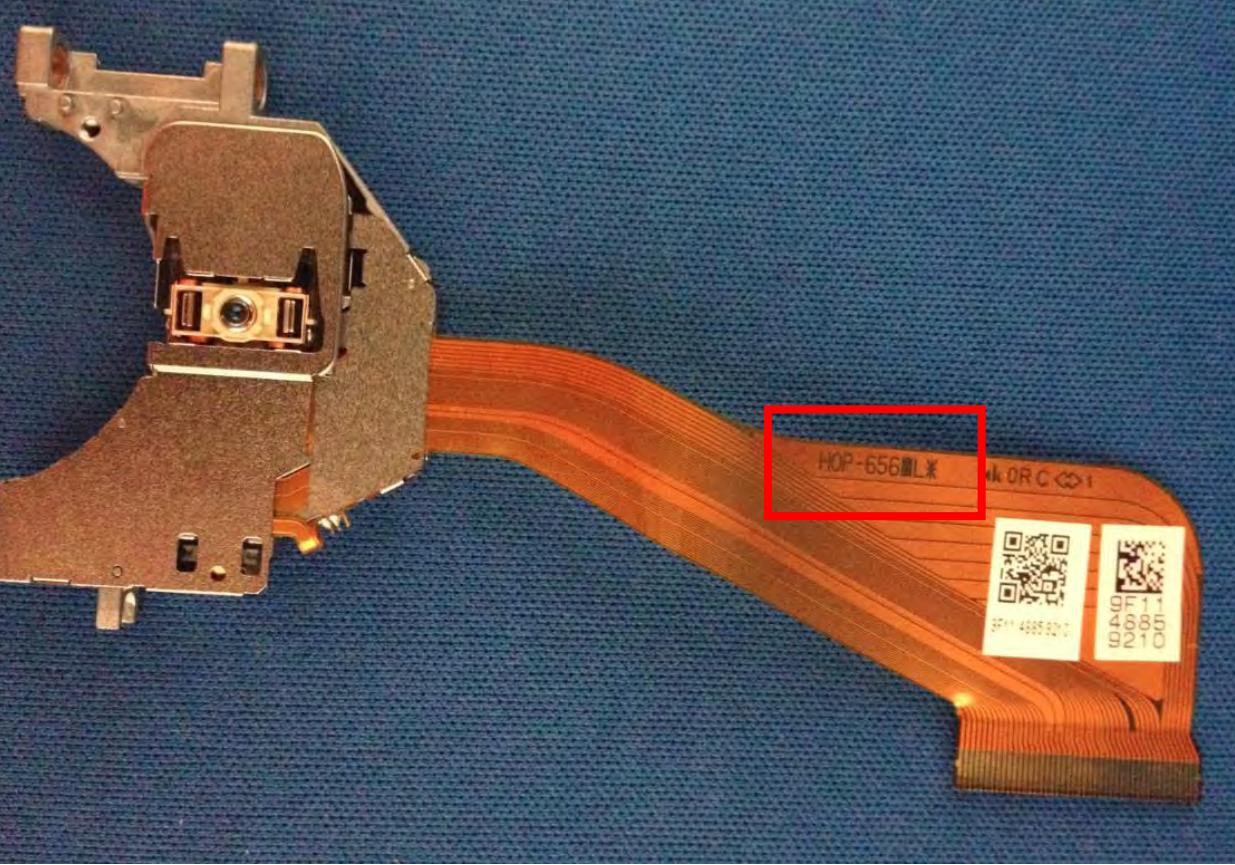
CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
<p>3. An optical pickup head, applicable for moving an objective lens assembly, comprising:¹</p>	<p>Each element of this claim, except where noted otherwise, and each element of the asserted claims dependent thereon, is present literally and/or under the doctrine of equivalents in the accused LG Products.²</p> <p>ITRI provides these infringement contentions before obtaining complete discovery and disclosures from LG. Specifically, LG has not produced documentation sufficient to demonstrate how each and every optical pickup head operates, and has not produced documentation sufficient to demonstrate that it has identified every LG document corresponding to accused optical pickup heads. Further, LG has “confirmed” that particular LG products utilize certain optical pickup heads that are not borne out by physical inspection. ITRI expects that LG will produce information to fully meet its discovery obligations regarding LG’s instrumentalities beyond that which is publically available. Accordingly, ITRI reserves the right to modify these infringement contentions based upon LG’s document production and required disclosures.</p>

¹ ITRI contends that the preamble to this claim is not limiting in any manner. ITRI’s references to the accused product regarding the preamble are for illustration only and do not constitute an admission that the preamble is limiting.

² The LG Products often practice the claim elements in numerous alternative ways in accordance with the present chart. The LG Products should be assumed to act alone or in combination as referenced herein and interpreted in the singular or plural accordingly. LG further provides the LG Products as well as the instructions to customers/users causing them to use the accused products in an infringing manner, including, without limitation, in their default and expected uses.

To the extent each element of this claim, and the asserted claims dependent thereon are not present literally in the accused LG Products, each element is present under the doctrine of equivalents because there is no substantial difference between the elements of the asserted claims and the corresponding functionality in the accused instrumentality, *i.e.*, the corresponding functionality in the accused product performs substantially the same function, in substantially the same way to achieve substantially the same results as the claimed elements.

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	<p>Upon physical inspection, the following products use optical pickup units (“OPUs”) that are identical for infringement analysis: GP08LU30, GP08LU11, GP10NB20, GT30L, and GP40LB10. As shown below, the GP40LB10 uses OPU HOP-6611L:</p>  <p>As shown below, the GP08LU11 uses OPU HOP-6561L.</p>

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	 <p>Because these OPUs are physically similar, all products that use either the HOP-6611L or HOP-65611L are infringe in a similar manner to the products physically inspected for this chart.</p> <p>Moreover, according to a letter from Defendants, dated April 5, 2013, the following products share the same OPU (the HOP-6611):</p>

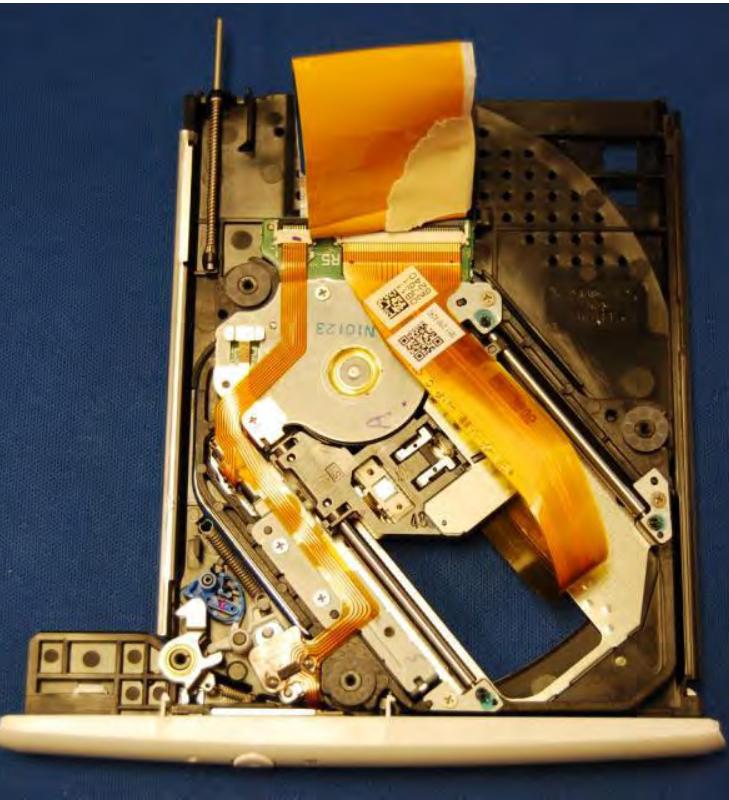
CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	REDACTED

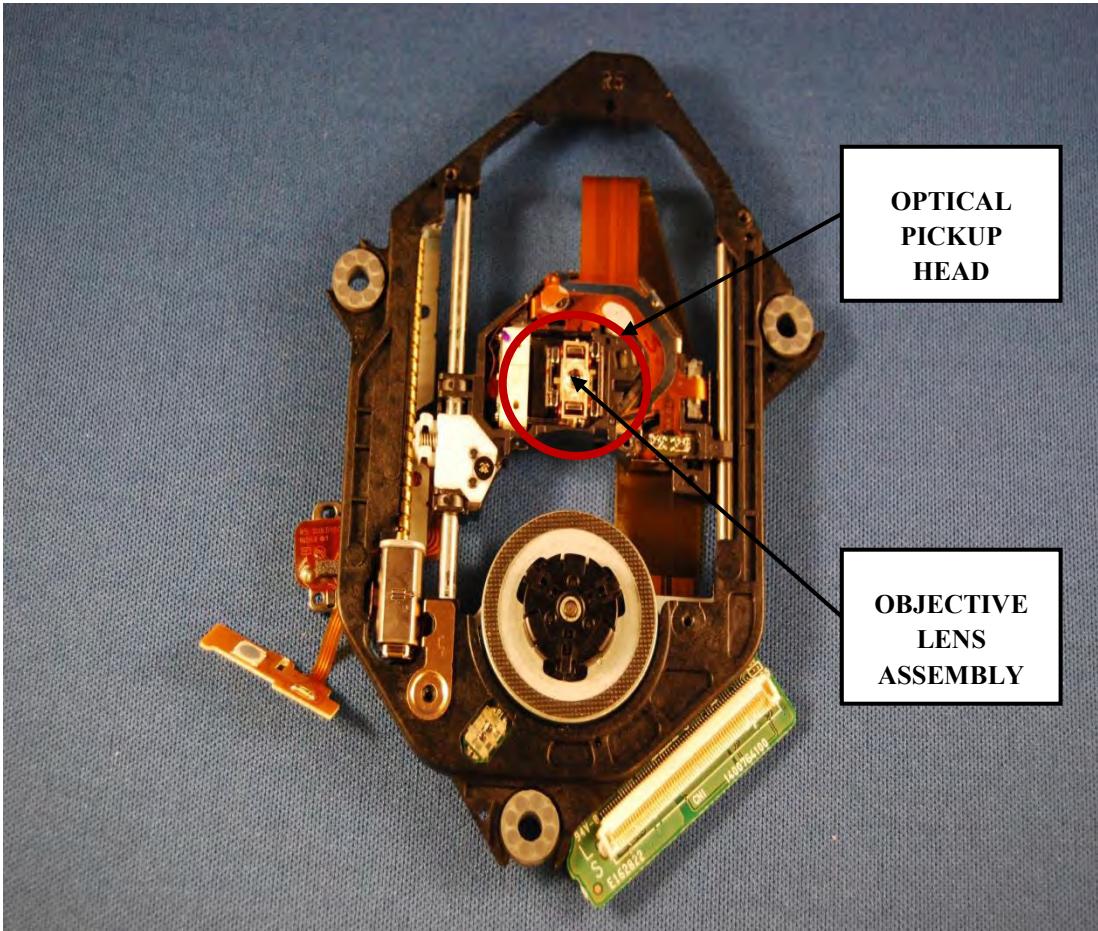
CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	<p><i>Photograph of the product box</i></p> 

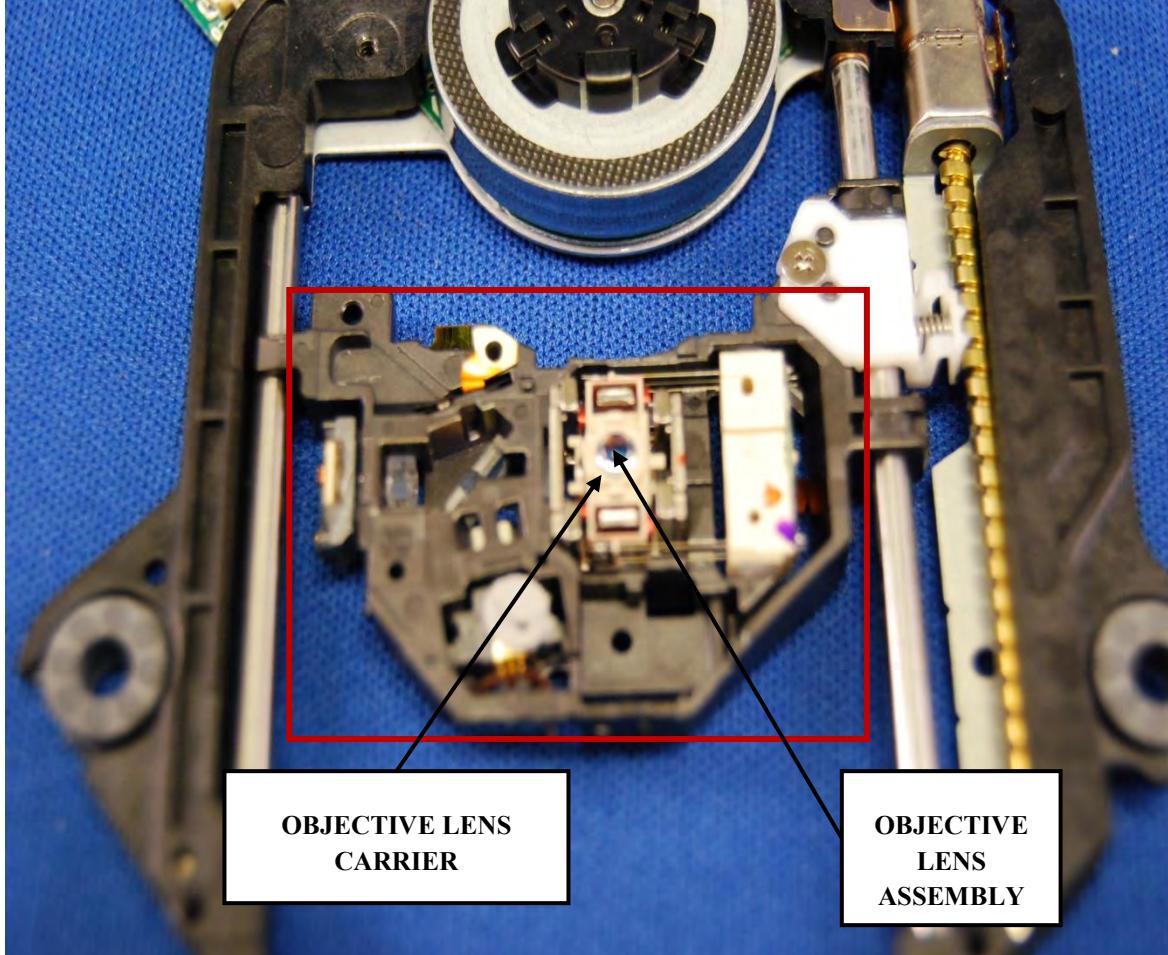
CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	<p><i>Photograph of LG GP08LU30 showing the make and model of manufacture</i></p> 

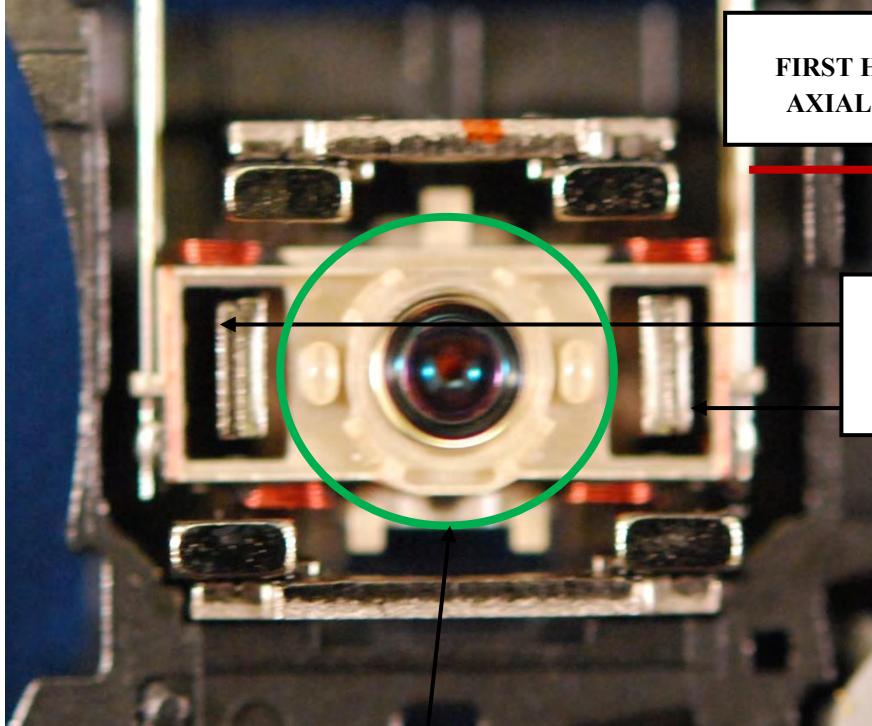
CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	<p><i>Photograph of the disk drive after removing the outer panels</i></p> 

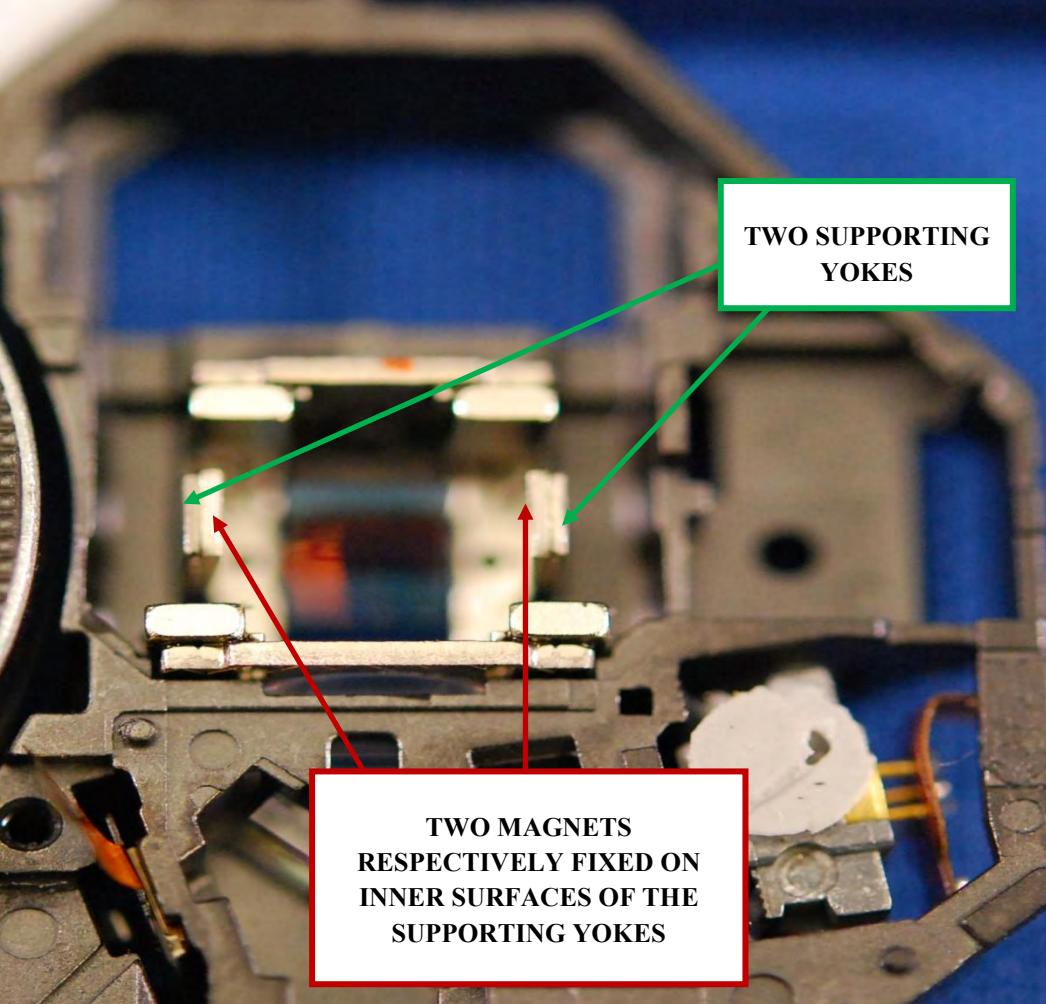
CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	<p><i>Photograph of the components involved in optical disk drive mechanism</i></p> 

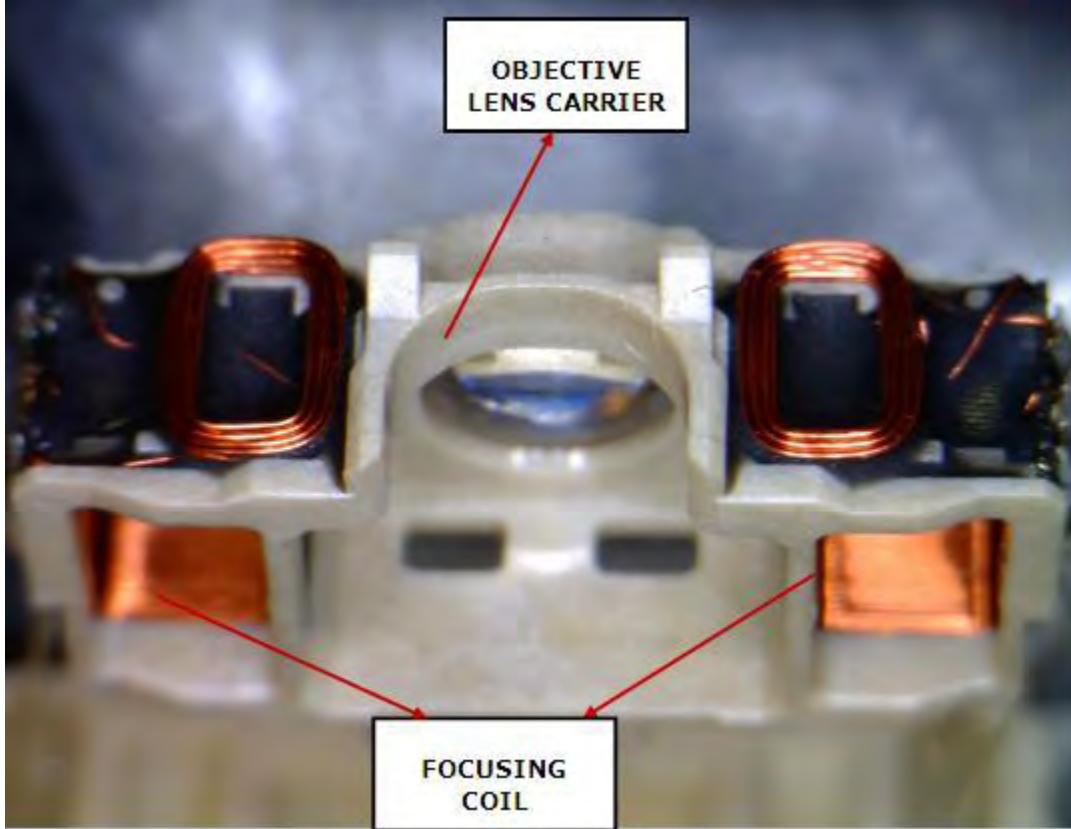
CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	<p><i>Photograph of optical lens assembly and optical pick up head</i></p>  <p>OPTICAL PICKUP HEAD</p> <p>OBJECTIVE LENS ASSEMBLY</p>

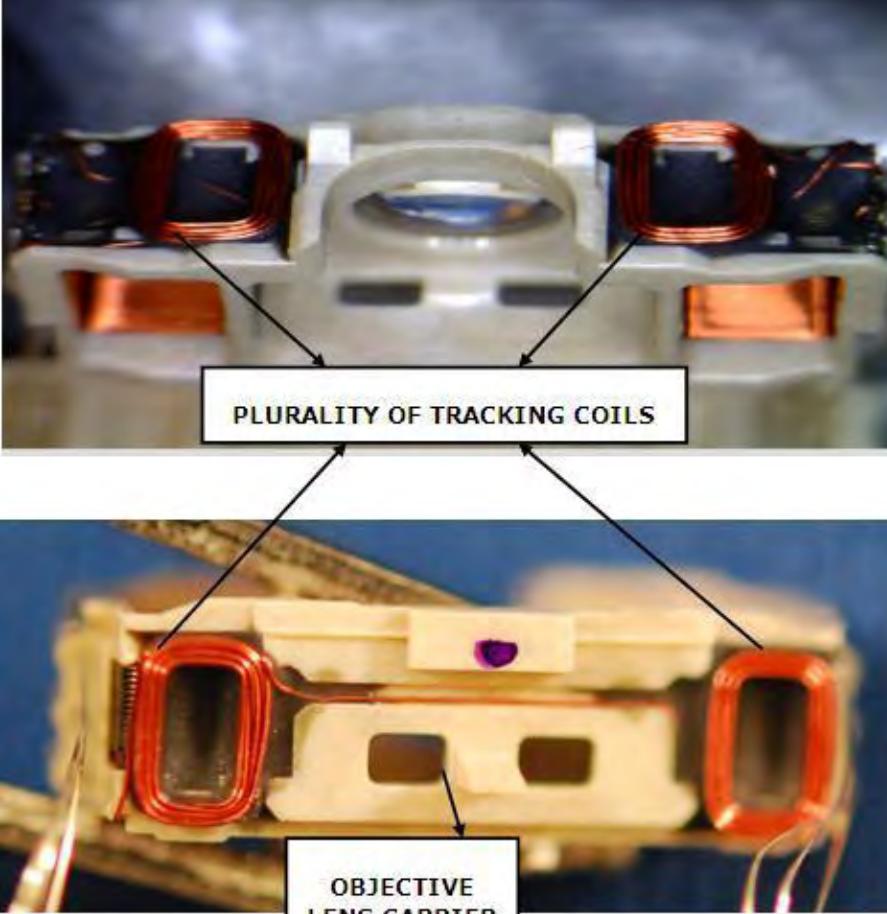
CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
3a. an objective lens carrier, for carrying the objective lens assembly,	 <p data-bbox="629 347 1797 1302">A close-up photograph of the internal components of a mobile phone, specifically the objective lens assembly and its carrier. The components are mounted on a black plastic carrier, which is highlighted with a red rectangular box. Two callout boxes point to the labeled parts: 'OBJECTIVE LENS CARRIER' points to the black plastic carrier, and 'OBJECTIVE LENS ASSEMBLY' points to the internal optical elements within the carrier.</p>

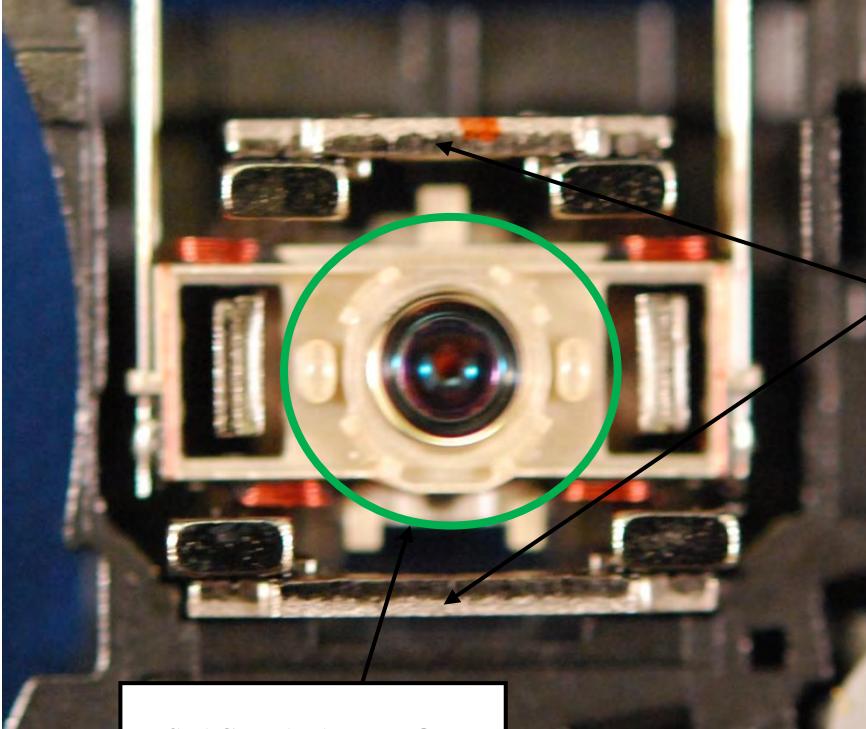
CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
3b. wherein a vertical direction, a first horizontal direction, and a second horizontal direction that are vertical to each other are defined on the objective lens carrier;	<p>OBJECTIVE LENS CARRIER</p> <p>FIRST HORIZONTAL DIRECTION</p> <p>SECOND HORIZONTAL DIRECTION</p> <p>VERTICAL DIRECTION (out of the paper)</p>

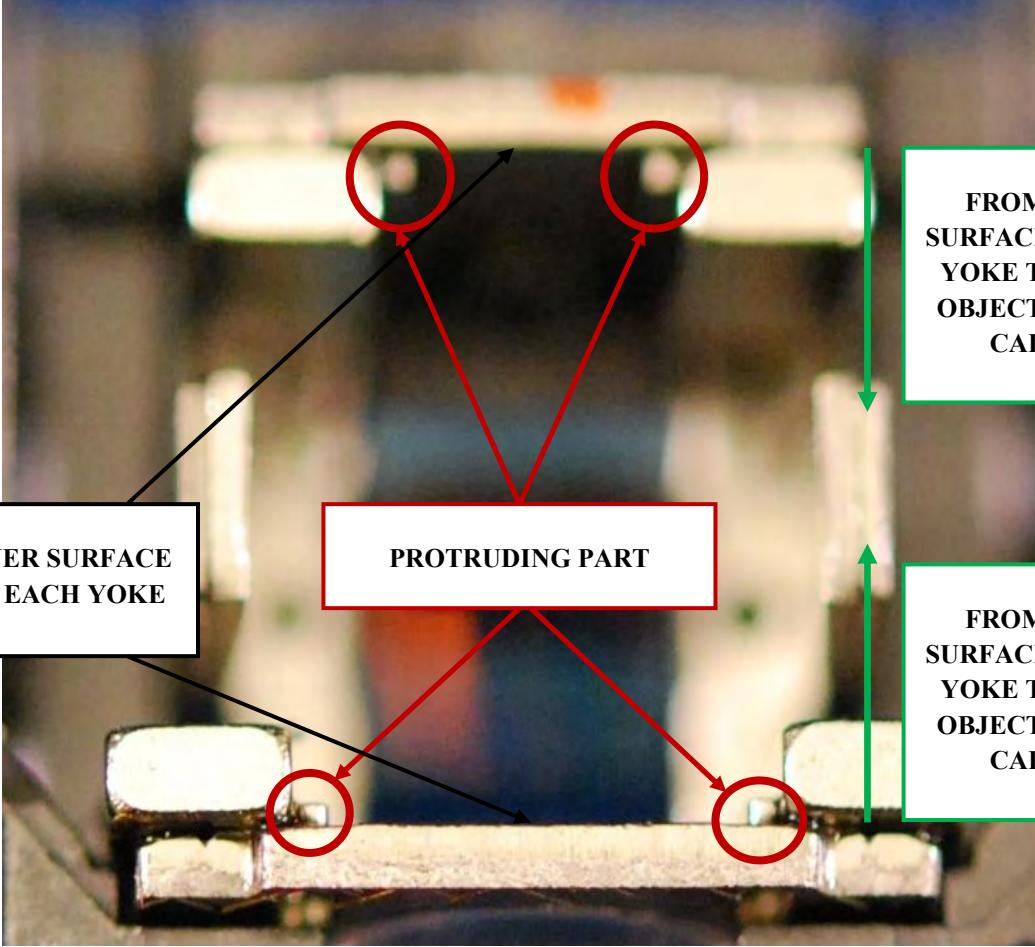
CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
3c. two supporting yokes, arranged along a first horizontal axial direction and spaced apart from each other by the objective lens carrier, such that the objective lens carrier is located between the two supporting yokes;	 <p data-bbox="1537 393 1818 458">FIRST HORIZONTAL AXIAL DIRECTION</p> <p data-bbox="1649 654 1833 752">TWO SUPPORTING YOKES</p> <p data-bbox="1094 1176 1396 1307">SPACED APART FROM EACH OTHER BY THE OBJECTIVE LENS CARRIER</p>

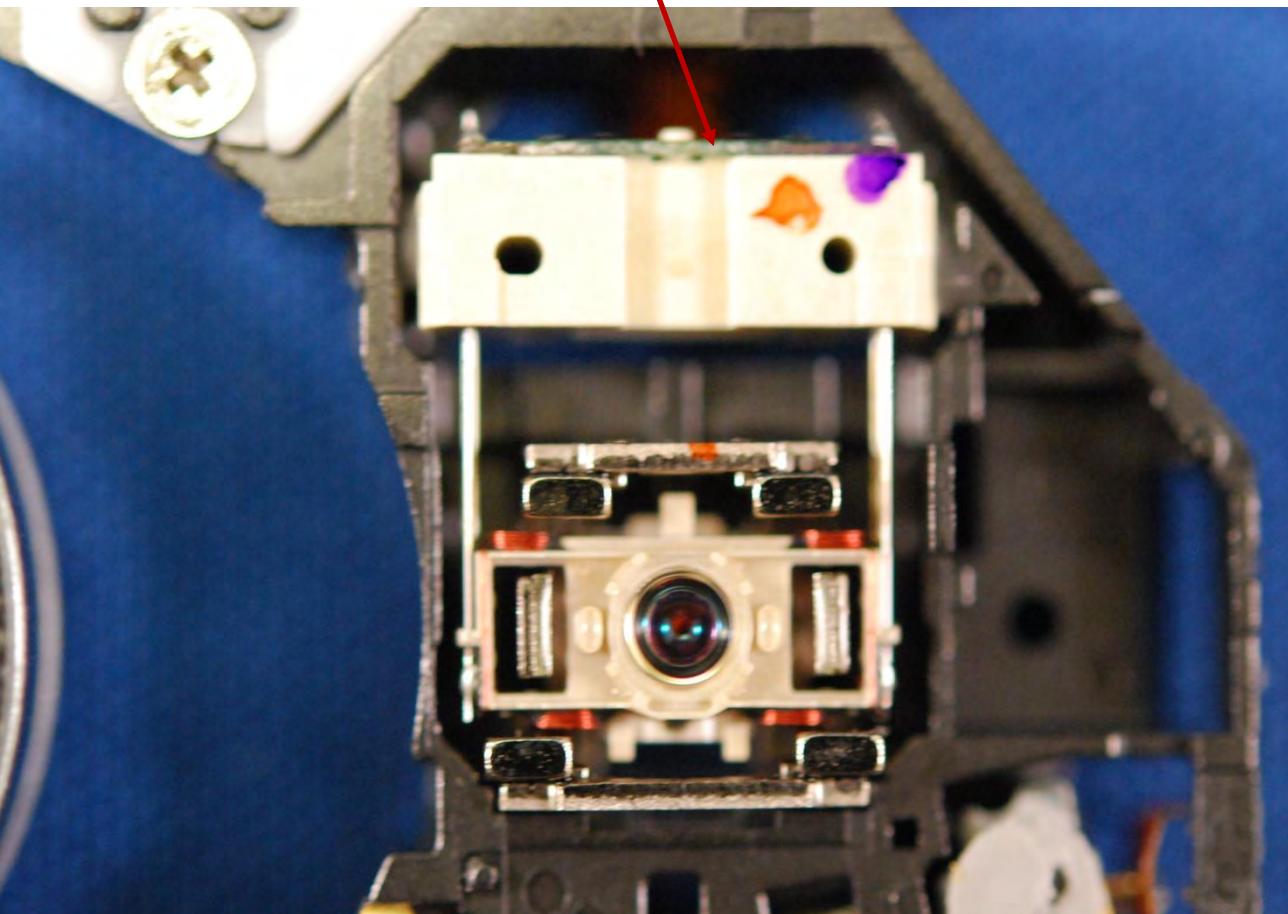
CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
3d. two magnets, respectively fixed on inner surfaces of the supporting yokes that are facing each other, such that the objective lens carrier is located between the two magnets	 <p data-bbox="1431 567 1685 633">TWO SUPPORTING YOKES</p> <p data-bbox="1030 1155 1396 1290">TWO MAGNETS RESPECTIVELY FIXED ON INNER SURFACES OF THE SUPPORTING YOKES</p>

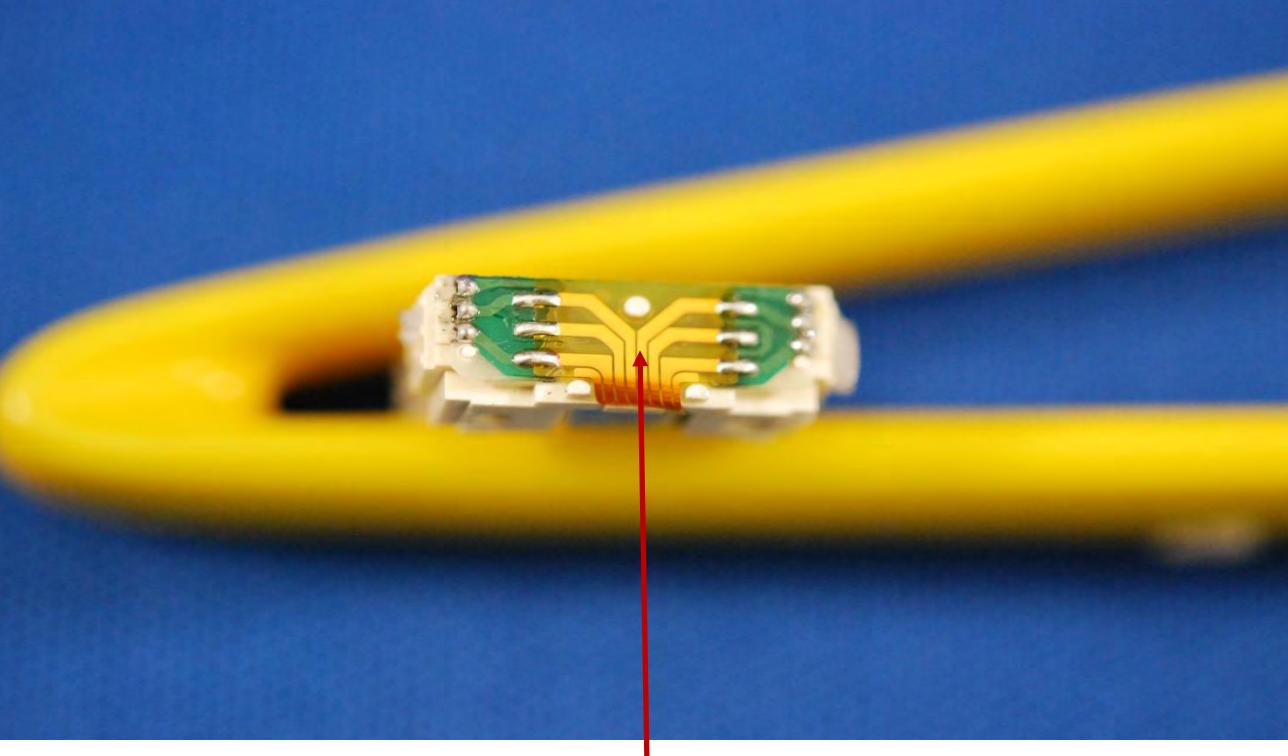
CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
3e. at least a focusing coil, winding around the objective lens carrier, wherein a normal direction of the focusing coil is parallel to the vertical direction;	 <p data-bbox="677 347 1748 1176">A close-up photograph of a camera module. In the center is a clear plastic objective lens carrier containing a blue lens element. The carrier is mounted on a white, rectangular printed circuit board (PCB). Two red, rectangular focusing coils are wound around the PCB, one on each side of the lens carrier. The PCB also features several orange and black components. Two white callout boxes with black outlines and red arrows point to the components: the top box points to the lens carrier with the text "OBJECTIVE LENS CARRIER", and the bottom box points to the coils with the text "FOCUSING COIL".</p>

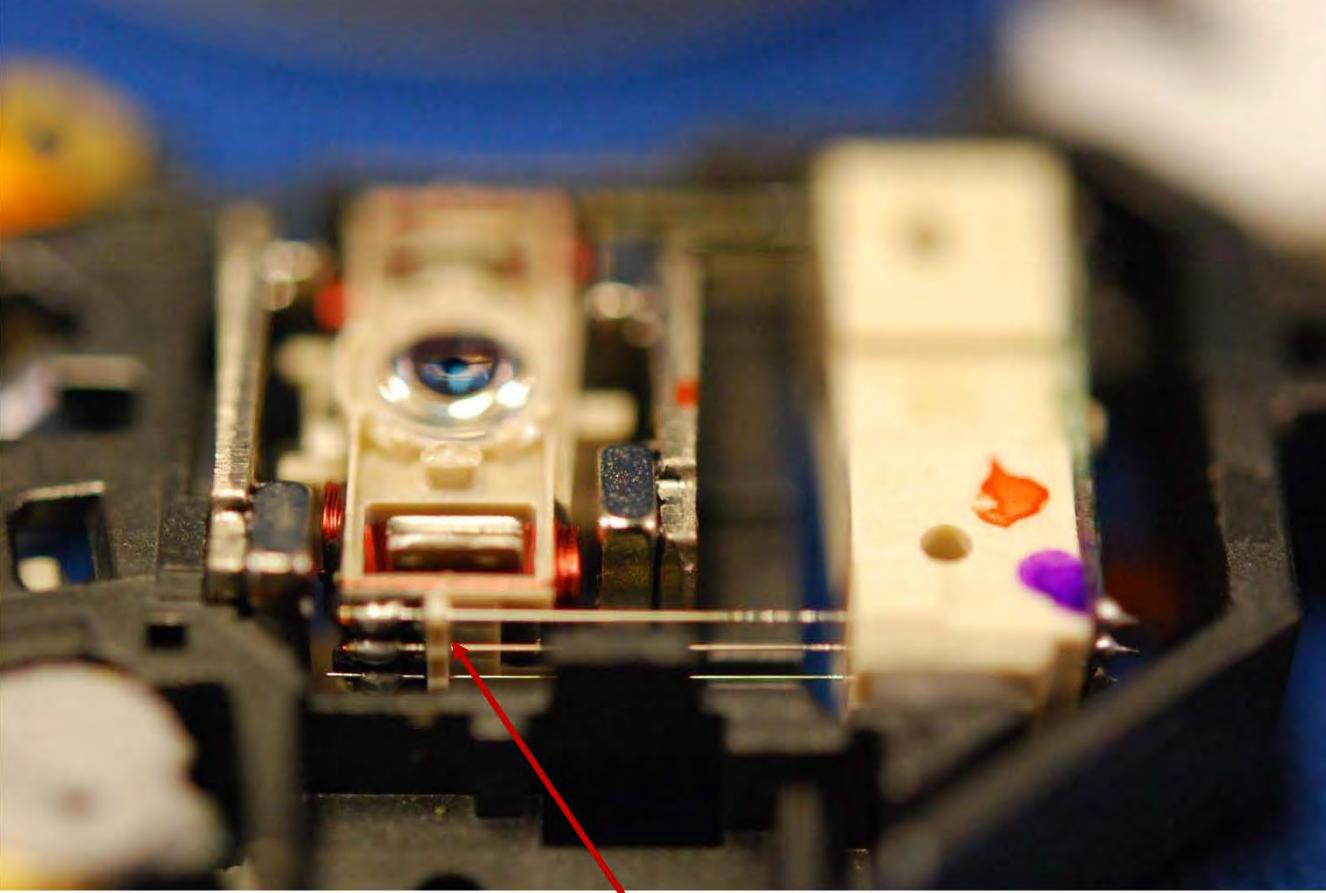
CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
3f. a plurality of tracking coils, disposed at the objective lens carrier, wherein a normal direction of the tracking coil is vertical to the vertical direction and parallel to a plane formed by the first horizontal direction and the second horizontal direction; and	

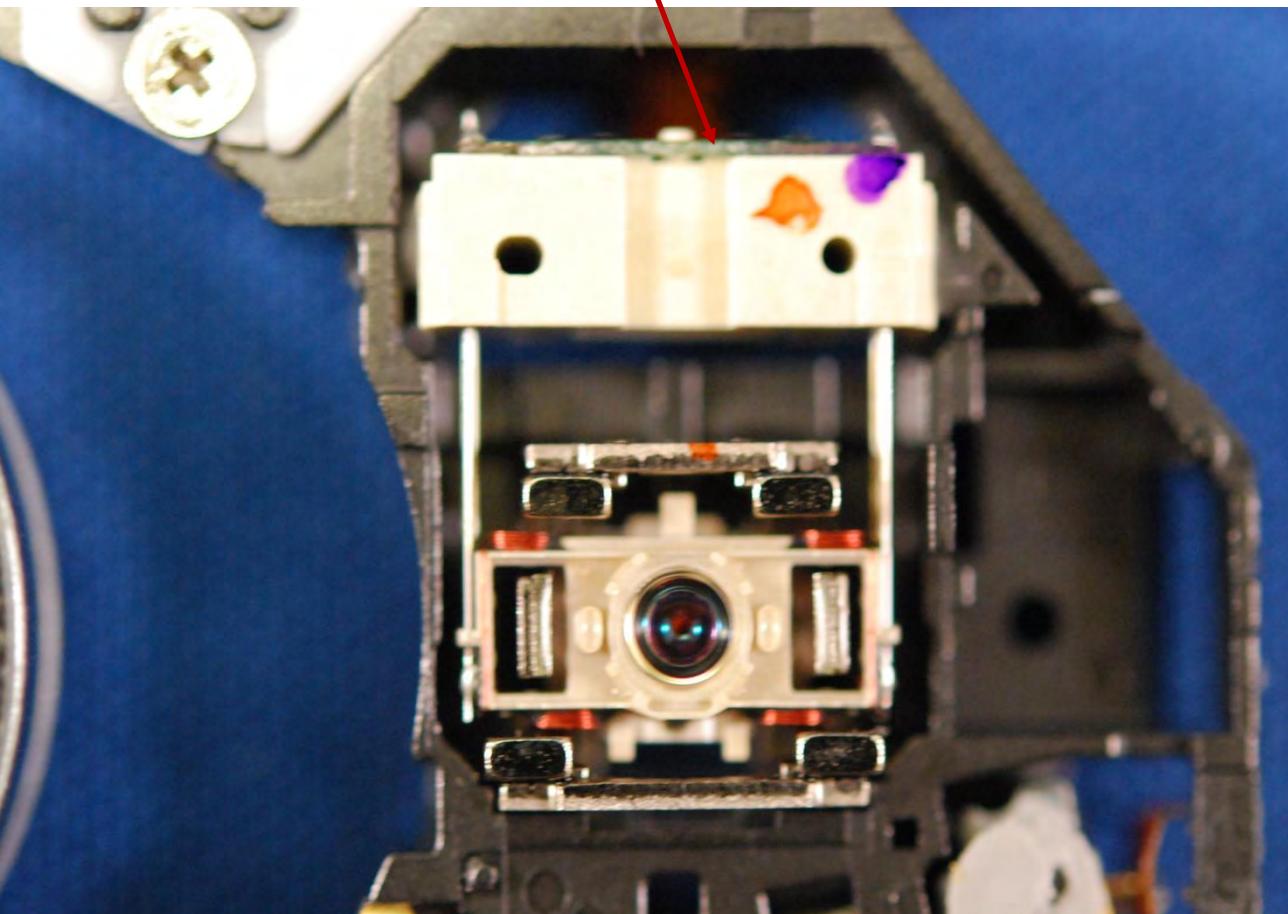
CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
3g. two yokes, arranged along the second horizontal axial direction and spaced apart from each other by the objective lens carrier, such that the objective lens carrier is located between the two yokes	 <p data-bbox="798 1041 1115 1237">SPACED APART FROM EACH OTHER BY THE OBJECTIVE LENS CARRIER</p> <p data-bbox="1558 556 1833 747">TWO YOKES ARRANGED ALONG THE SECOND HORIZONTAL AXIAL DIRECTION</p> <p data-bbox="1622 964 1833 1122">SECOND HORIZONTAL AXIAL DIRECTION</p>

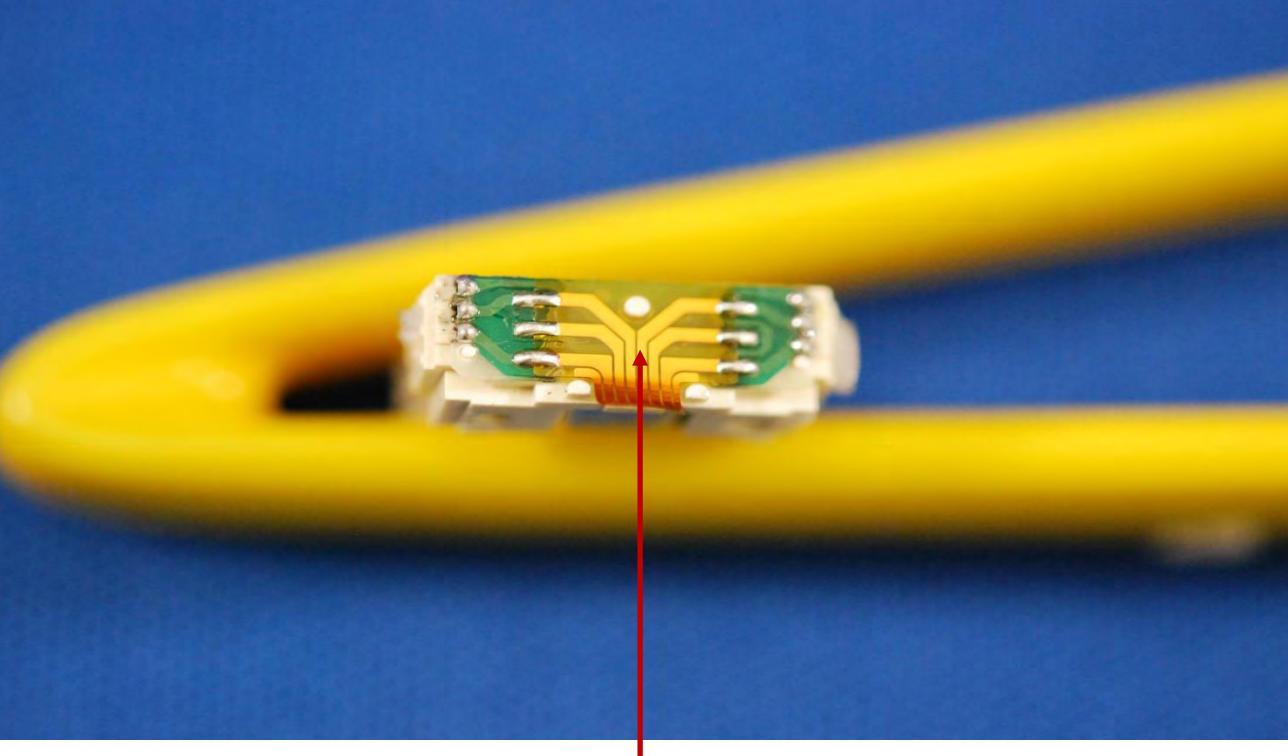
CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
3h. wherein a protruding part is protruded from an inner surface of each yoke and extends towards the objective lens carrier.	 <p data-bbox="612 873 865 1003">INNER SURFACE OF EACH YOKE</p> <p data-bbox="1056 873 1393 971">PROTRUDING PART</p> <p data-bbox="1594 530 1869 742">FROM INNER SURFACE OF EACH YOKE TOWARDS OBJECTIVE LENS CARRIER</p> <p data-bbox="1594 938 1869 1134">FROM INNER SURFACE OF EACH YOKE TOWARDS OBJECTIVE LENS CARRIER</p>

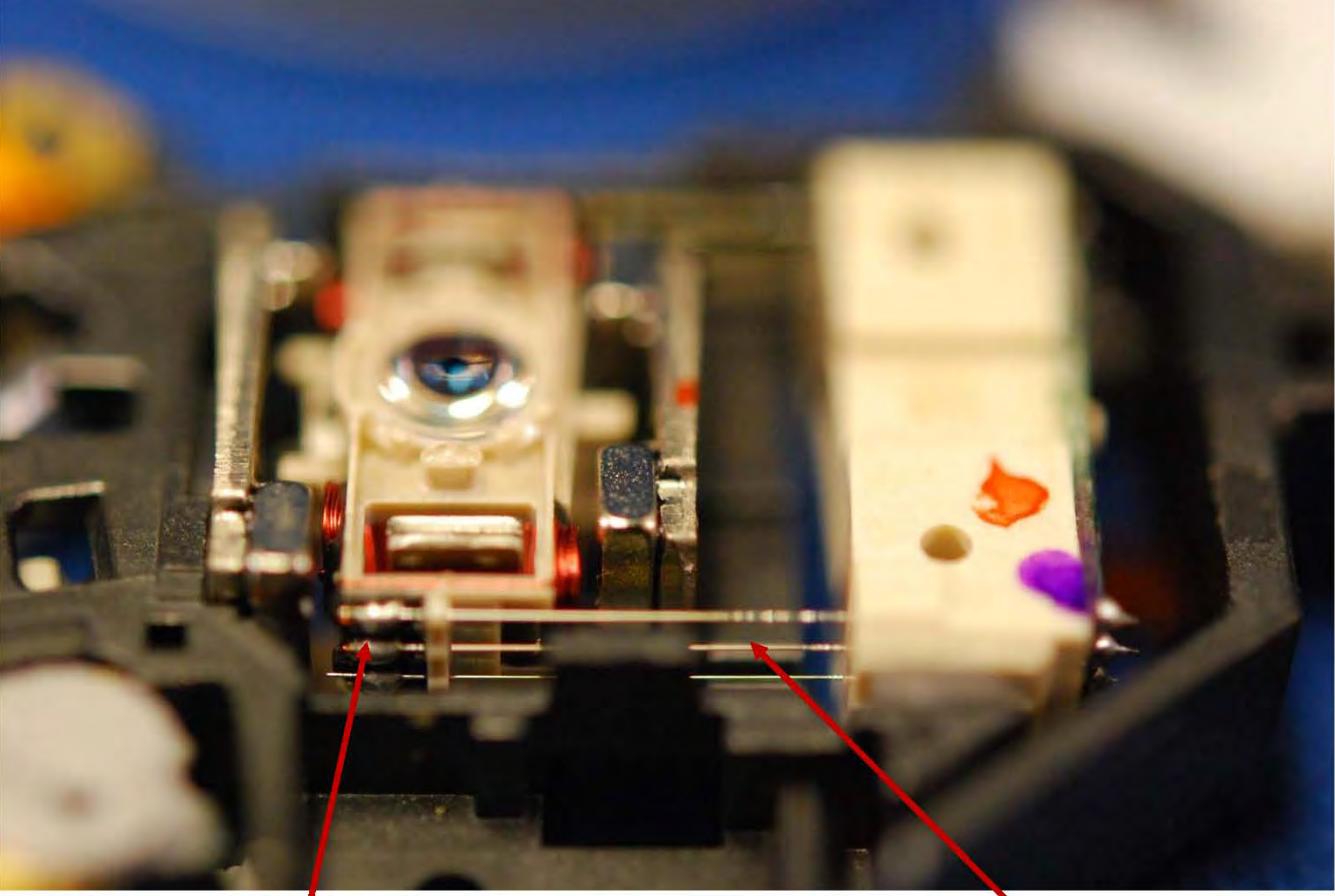
CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
4. The optical pickup head as claimed in claim 3, further comprising a circuit board and a plurality of metal lines, wherein the circuit board is fixed on one of the supporting yokes to receive electric power input from an external device; one end of the metal line is electrically connected to the circuit board, and other end is electrically connected to the focusing coil and the plurality of tracking coils.	 <p data-bbox="1098 375 1309 399">CIRCUIT BOARD</p> <p data-bbox="570 456 1858 1370">A close-up photograph of an optical pickup head. A red arrow points to a white rectangular component labeled 'CIRCUIT BOARD'. The board is mounted on a black metal frame. In the center, there is a lens assembly with a red protective cover. The surrounding structure is made of dark metal parts.</p>

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	 <p data-bbox="1100 1241 1326 1266">CIRCUIT BOARD</p>

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	 <p data-bbox="851 1318 1579 1351">ELECTRICALLY CONNECTED TO THE FOCUSING COIL</p>

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
4. The optical pickup head as claimed in claim 3, further comprising a circuit board and a plurality of metal lines, wherein the circuit board is fixed on one of the supporting yokes to receive electric power input from an external device; one end of the metal line is electrically connected to the circuit board, and other end is electrically connected to the focusing coil and the plurality of tracking coils.	 <p data-bbox="1098 375 1309 399">CIRCUIT BOARD</p> <p>A close-up photograph of an optical pickup head, likely from an LG GP08LU30, GP08LU11, GP10, GT30N, or GP40 product. The image shows the internal components of the head, including a white circuit board labeled 'CIRCUIT BOARD' with a red arrow. The circuit board is fixed on one of the supporting yokes. The head also features a lens and various metal parts. The background is a solid blue color.</p>

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	 <p data-bbox="1100 1241 1326 1266">CIRCUIT BOARD</p>

CLAIM ELEMENT (USP 7,672,198)	EVIDENCE FROM PRODUCT (LG GP08LU30, GP08LU11, GP10, GT30N AND GP40)
	 <p data-bbox="555 1313 1267 1346">ELECTRICALLY CONNECTED TO THE FOCUSING COIL</p> <p data-bbox="1372 1313 1784 1346">PLURALITY OF METAL LINES</p>